TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1895.

No. 89.

HENRY PRATT AND JOHN J. RYAN, PARTNERS AS HENRY PRATT & COMPANY, PLAINTIFFS IN ERROR,

vs.

PARIS GAS LIGHT AND COKE COMPANY.

IN ERROR TO THE SUPREME COURT OF THE STATE OF ILLINOIS.

FILED DECEMBER 4, 1895.

(16,098.)

(16,098.)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1896.

No. 380.

HENRY PRATT AND JOHN J. RYAN, PARTNERS AS HENRY PRATT & COMPANY, PLAINTIFFS IN ERROR,

vs.

PARIS GAS LIGHT AND COKE COMPANY.

IN ERROR TO THE SUPREME COURT OF THE STATE OF ILLINOIS.

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1 STATE OF ILLINOIS, } ss.:
Supreme Court, Central Grand Division, }

At a supreme court begun and held at Springfield on the first Tuesday in the month of January, in the year of our Lord one thousand eight hundred and ninety—the same being the second day of January, one thousand eight hundred and ninety-four.

Present: David J. Baker, chief justice; Jesse J. Phillips, justice; Simeon P. Shope, justice; Jacob W. Wilkin, justice; Joseph M. Bailey, justice; Alfred M. Craig, justice; Benjamin D. Magroder, justice.

Be it remembered that on, to wit, the 29th day of December, in the year of our Lord one thousand eight hundred and ninety-three, there was filed in said supreme court a record of the proceedings of the circuit court of Edgar county and of the appellate court of the third district, State of Illinois; which said records are in words and figures following, to wit:

2 UNITED STATES OF AMERICA.

STATE OF ILLINOIS, } ss.:
Edgar County, }

Circuit Court, March Term, A. D. 1893.

Pleas before the Honorable F. Bookwalter, one of the three judges of the fourth judicial circuit of the State of Illinois and presiding judge of the circuit court of Edgar county, in the State aforesaid, at a term thereof begun and held at the court-house, in the city of Paris, in said county, on the 13th day of March, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the said United States the one hundred and seventeenth.

Present: Honorable F. Bookwalter, one of the three judges of the fourth judicial circuit of the State of Illinois; Alfred Tanner, State's attorney; James L. Vance, clerk; R. S. Briscoe, sheriff.

Attest: J. L. VANCE, *Clerk.*

STATE OF ILLINOIS, } ss.:
Edgar County, }

The People of the State of Illinois to the sheriff of said county, Greeting:

We command you to summon Paris Gas Light and Coke Company, if it shall be found in your county, personally to be and appear before the circuit court of said Edgar county on the first day of the next term thereof, to be holden at the court-house, in
3 Paris, in said Edgar county, on the 14th day of March, 1892, to answer unto Henry Pratt and John J. Ryan, partners as Henry Pratt & Co., in a plea of assumpsit, to the damage of said

plaintiff-, as *he* say, in the sum of seven thousand ($7,000.00) dollars.

And have you then and there this writ, with an endorsement thereon in what manner you shall have executed the same.

Witness H. E. Rives, clerk of said court, and the seal thereof, at his office, in Paris, in said Edgar county, this 2nd day of March, A. D. 1892.

[L. S.] HENRY E. RIVES, *Clerk.*

The following return is endorsed on the back of said writ:

STATE OF ILLINOIS, } ss:
Edgar County, }

I have duly served the within summons upon the within-named defendant by delivering a true copy thereof to Wm. Seibert, president of said company, in Paris, in said Edgar county, this 3rd day of March, 1892.

R. S. BRISCOE, *Sheriff.*

Also endorsed on the back of said writ is the following:

No. 7025. Circuit court summons. Edgar circuit court. In the matter of Henry Pratt & Co. *vs.* Paris Gas Light and Coke Company. Summons, March term, 1892.

STATE OF ILLINOIS, } ss:
County of Edgar, }

No. —.

4 I have duly served the within by reading the same to the within-named —, as I am therein commanded.

R. S. BRISCOE, *Sheriff.*

Fees.

Service	$0 75
Mileage	10
Return	10
	$0 95

Filed in the circuit court this — day of ——, A. D. 189-.

—— ——, *Clerk.*

RICHARDS, DYAS & VAN D., *Attorney-.*

STATE OF ILLINOIS, } ss:
Edgar County, }

In the Edgar Circuit Court, March Term, 1892.

Henry Pratt and John J. Ryan, partners as Henry Pratt and Company, plaintiffs, by John T. Richards and Dyas and Van Dyke, their attorneys, complain of The Paris Gas Light and Coke Company, of Paris, Illinois, defendants, of a plea of trespass on the case *of* promises—

For that whereas the defendant on the 1st day of March, in the year 1892, in the county aforesaid, was indebted to the plaintiff- in the sum of seven thousand dollars ($7,000.00) for goods, chattels, and effects before that time sold and delivered by the plaintiff- to the defendant at *his* request, and in the like sum for goods, chattels, and effects before that time bargained and sold by the plaintiff- to the defendant at *his* request.

And in the like sum for work and services before that time
5 done and bestowed and material for the same work furnished by the plaintiff- for the defendant at *his* request.

And in the like sum for money before that time lent by the plaintiff- to the defendant at *his* request.

And in the like sum for money before that time paid and expended by the plaintiff- for the use of the defendant at *his* request.

And in the like sum for money before that time received by the defendant for the use of the plaintiff-, and in the like sum for the interest on divers sums of money before that time forborne by the plaintiff- to the defendant at *his* request for divers spaces of time before then elapsed.

And in the *oike* sum for money found to be due from the defendant to the plaintiff- on an account then and there stated between them, and, being so indebted, the defendant, in consideration thereof, then and there promised the plaintiff- to pay *him* on request the several sums of money so due to *him* as aforesaid; yet the defendant, though requested, has not paid the same or either of them or any part thereof to the plaintiff-, but refused to do so, to the damage of the plaintiff- of seven thousand dollars (7,000), and therefore *he* brings *his* suit, etc.

JOHN T. RICHARDS,
DYAS & VAN DYKE,
Attorneys for Plaintiffs.

Paris Gas Light and Coke Company to Henry Pratt & Company, Dr.

To goods, chattels, & effects	$7,000 00
To goods, chattels, and effects bargained & sold, etc.	7,000 00
To work and services done and bestowed and material furnished	7,000 00
To money lent	7,000 00
6 To money paid and expended for use	7,000 00
To money received by defendant for use of plaintiff-	7,000 00
To money forborne by plaintiff-	7,000 00
To money account stated	7,000 00

Said instrument bears the following endorsement:

No. 7026. Henry Pratt & Co. *vs.* Paris Gas Light and Coke Company. Filed March 2, 1892. H. E. Rivers, cir. clerk. John T. Richards and Dyas and Van Dyke, plaintiffs' attorneys.

STATE OF ILLINOIS, } ss:
County of Edgar, }

Edgar Circuit Court, March Term, A. D. 1892.

HENRY PRATT *et al.*
vs.
PARIS GAS LIGHT & COKE COMPANY. } Pleas.

1st. And now comes the defendant, by Sellar, *his* attorney, and defends the wrong and injury when, etc., and says that it did not promise in manner and form as the plaintiff- *here* above
7 thereof complained against it; and of this it puts itself upon the country.

2nd. And for a further plea in this behalf the defendant says that the plaintiff- ought *bot* to have their aforesaid action against it, the defendant, because it says that the several supposed causes of action set forth in said declaration are one and the same, to wit, the supposed cause of action is on a supposed within contract, dated Jan. 8, 1889, filed herein by plaintiffs and marked "Copy of instrument *sent* on," and none other, in and by which the said supposed within contract the said plaintiffs agreed at their own proper cost and expense to do all of the work and furnish all of the materials for the erection and completion of a water-gas apparatus for defendant, to be erected and operated in accordance with patents granted to said plaintiffs April 22, 1884, and April 12, 1887, together with any improvements which said plaintiffs may have, to consist of the following apparatus, to wit, one set of double gas-generators, two hydraulic seals, one vaporizor, one pressure-gague, one test-light purifier can, one tubular boiler 3 x 10 feet, one full fire front, one set of grate bars, one safety valve, one feed-water injector, one combination water gague, one steam gague, one blow-off cock, one back arch all set up and ready for brick-work, one number 4 Sturtevant steel pressure-blower, one four-horse-power upright engine, one tubular condenser 3 x 12 feet, one feed oil tank to hold not less than 100 gallons, the above work to be set up and connected with all necessary steam, oil, and water pipes, to make the same complete and ready for making gas, together with the right to use the above-named patents or improvements at the works of said defendant, at Paris, Edgar county, Illinois, for the sum of $4,850, to be paid in the following manner, to wit, defendant to pay the
8 freight on material delivered (to — deducted from the final payment), to be paid in thirty days after the completion of said work and the same has been tested to the satisfaction of the said defendant; and the said plaintiffs further agreed to save and keep the said defendant harmless against any suits which might be brought against it for infringements of any patents, and if any suit was brought to defend the same at plaintiffs' expense, and the said defendant avers that the said plaintiffs have not given and assumed to the defendant the right to use the said water-gas apparatus at Paris, in said Edgar county, Illinois, in accordance with

patents granted to said plaintiffs April 22, 1884, and April 12, 1887, together with any improvements made thereon by said plaintiffs; and the defendant avers that said supposed patents of April 22, 1884, and April 12, 1887, are void and are an infringement on patents before that time granted and issued by the Government of the United States, one to Theodore G. Springer, of date Feb. 7, 1882, No. 10032, issued and good for 17 years from that date, and one issued to Thad-eus S. C. Lowe, No. 167,847, dated September 21, 1875; and the said defendant further avers that said plaintiffs have not saved and kept harmless the said defendant against suits brought against *them* for infringement of said patents claimed by said plaintiffs and have not defended said defendant against such suits nor defended the same at plaintiffs' expense, but, on the contrary, the defendant avers that heretofore, to wit, on the 29th day of July, A. D. 1889, the National Gas Light and Fuel Company commenced a suit in the circuit court of the United States of America for the southern district of Illinois by bill in chancery against this defendant and Z. E. Powell, president of said defendant company, for an infringement of said patent No. 10032, issued as aforesaid to said Theodore G. Springer, and which had before that time been duly assigned by said Springer to said National
9 Gas Light and Fuel Company, and for an injunction against this defendant restraining this defendant from using said water-gas apparatus so sold by plaintiffs to this defendant and for fifty thousand dollars damages and costs; and said defendant further avers that immediately upon this defendant's receiving notice of said suit it requested said plaintiffs to defend *them* against said suit, and then and there received notice of said plaintiffs that they would do so, but said plaintiffs have wholly refused to defend *them* against said suit or protect this defendant from said suit and costs and damages, and said suit is still pending in said court, and this defendant was compelled to and did at once quit using said apparatus for making gas as aforesaid, and has wholly, by reason of the premises, been compelled and has wholly ceased to use the same; whereupon this defendant avers that the consideration of said contract has wholly failed, and said defendant has tendered back to the said plaintiffs said water-gas apparatus and requested said plaintiffs to remove the same before the commencement of this suit, and this the defendant is ready to verify; whereupon it prays judgment, etc.

3rd. And for a further plea in this behalf the said defendant says *actio non*, because it says that the said several supposed causes of action in said declaration mentioned are one and the same, to wit, the supposed cause of action on the supposed contract filed by plaintiffs in this cause in the words and figures following, to wit:

"This contract and agreement made and entered into this the 8th day of Jan. one thousand eight hundred and eighty-nine by and between the Paris Gas Light and Coke Company party of the first part of Paris, Edgar county, and State of Illinois, and Henry
Pratt & Co., of county of Cook and State of Illinois party
10 of the second part, witnesseth that the said party of the second part do by these presents covenant and agree that the

said party of the first part *that* in consideration of the sum hereinafter named that the party of the second part will at their own proper cost and expense do all the work and furnish all the material for the erection and completion of a water-gas apparatus erected and operated in accordance with patents granted to Pratt & Ryan April 22, 1884, and April 12, 1887, together with any improvements which the said party of the second part —, to consist of the following apparatus, to wit: one set of double gas-generators; two hydraulic seals, one vaporizor, one pressure-gague, one test-light purifier can, one tubular boiler, 3 x 10 feet, one full fire front, one set of grate bars, one safety valve, one feed-water injector, one combination water gague, one steam gague, one blow-off cock, one back arch, all set up and ready for brick-work, one number 4 Sturtevant steel pressure-blower, one four-horse-power upright engine, one tubular condenser 3 x 12 feet, one feed oil tank to hold not less than 100 gallons, the above work to be set up and connected with all necessary steam and vapor pipes to make the same complete and ready for making gas, together with the right to use the above-named patents or improvements at the works of said party of the first —, at Paris, Edgar county, Illinois, for the sum of $4,850, to be paid in the following manner to wit:

To pay the freight on material delivered (to be deducted from final payment) to be paid in thirty days after completion of said work and the same has been tested to the satisfaction of the said party of the first part, and the said party of the second part further agreed to save and keep the said party of the first part harmless against any suit, which might be brought against it for in-
11 fringements of any patents, and if any suit is brought, to defend the same at *our* expense, and the said party of the second part further agrees to complete the said work on or before the first day of March, 1889, and if the said party of the second part fail to complete the same on or before the said first day of March, the said party of the second part will forfeit and pay to the said party of the first part, the sum of ten dollars per day until the said work shall be completed, said sum to be deducted out on any money which shall be due the said party of the second part.

(Signed) PARIS GAS LIGHT AND COKE COMPANY,
By Z. E. POWELL, *President.*
HENRY PRATT & CO.,
Per H. PRATT."

And the said defendant avers that the execution of the said supposed written agreement was procured and obtained by them, the said plaintiffs, of this defendant by the use of fraud and circumvention—that is to say, that before the execution of said contract the said plaintiffs *falsely and fraudulently represented to the said defendant that said patents mentioned in said written contract, and under which said water-gas apparatus was to be operated, were not an infringement on any other patents, which statement and representation were at the time then and there false and untrue;* and said plaintiffs further falsely and

fraudulently represented that said patents were not an infringement on what is *usually known as the Springer patent, which said representation was untrue, and said plaintiffs at the time knew that it was untrue;* said plaintiffs further represented that said Springer patent belongs to the National Gas Lt. and Fuel Company, *and that*
12 *said National Gas and Fuel Company had commenced a suit against the plaintiffs for an infringement of their patent, and had found that they had* no claim for an infringement of their patent and had dismissed said suit and had abandoned all claim — the plaintiffs' patents were an infringement on the Springer patent, and stated that said National Gas and Fuel Company did not then claim that it was an infringement on their patent, and would not molest or disturb the defendant in the use of said patents claimed by plaintiffs, all of which said representations were falsely and fraudulently made by said plaintiffs, the said plaintiffs then and there knowing the same to be false, to induce said defendant to enter into said contract; and said defendant stated to said plaintiffs before said contract was entered into that if said defendant was liable to be sued for an infringement by the use of said plaintiffs' water-gas apparatus that this defendant would not purchase the same, and the said plaintiffs assured the said defendant that no suit would be brought against them by said National Has Light and Fuel Company or by any one else, and that said National Gas and Fuel Company had abandoned all claim that plaintiffs' patents were an infringement on their patents, which statements and representations were then and there false and fraudulent, and the said plaintiffs knew the same were, and said plaintiffs had before *that time been notified* by said National Gas and Fuel Company that suit would be brought against any one who might use the said water-gas apparatus as made by them; and *thereupon the said defendant, confiding in the said false and fraudulent representations aforesaid, then and there executed the said writing as aforesaid and not otherwise; and* the said defendant avers that shortly thereafter, to wit, on the 29th day of July, A. D. 1889, the said National Gas Light and Fuel Company commenced a suit in the circuit — of the United States of America in and for the southern
13 district of Illinois against this defendant and Z. E. Powell, the president of this defendant, for an infringement of said Springer patent and for an injunction and damages, which said suit is now pending in said court; *and said plaintiffs, well knowing that they cannot successfully defend the same, have neglected and refused to have the same tried and have neglected and refused to protect this defendant, and this defendant was compelled to and has ceased to use said water-gas apparatus, and the said defendant cannot* use the same by reason of the premises, as before the commencement of this suit this defendant tendered back to the said plaintiff the said water-gas apparatus aforesaid and requested them to remove the same from the premises of this defendant, and this the said defendant is ready to verify; wherefore it prays judgment, etc.

4th. And for a further plea in this behalf the defendant says *action non*, because it says that the said several supposed causes of action in said declaration mentioned are one and the same, *that*,

the said supposed contract set forth in the third plea by this defendant pleaded herein; and this defendant avers that before said supposed contract was entered into that the said plaintiffs falsely, knowingly, and fraudulently represented to the defendant that said water-gas apparatus and patents named in said 3rd plea were not an infringement on any other patents or rights of any persons or corporation, and that no person or corporation claimed that they were an infringement upon *of* any other rights of any persons or corporation, and this defendant, relying upon said representation, entered into said contract; that afterwards, to wit, on or about the 20th day of January, A. D. 1889, this defendant was notified by the National Gas Light and Fuel Company that said gas apparatus sold to this defendant by plaintiffs was an infringement on its rights, and if this defendant used the same that suit would be brought against this defendant for damages and for an injunction restraining this defendant from using the said water-gas apparatus agreed to be furnished by said plaintiffs; that at that time no part of said gas apparatus had been erected by said plaintiffs, but said plaintiffs were at Paris preparing to erect the same; that thereupon this defendant notified said plaintiffs that said National Gas Light and Fuel Company had notified said defendant that said patents and said water-gas apparatus agreed to be erected and furnished by said plaintiffs to this defendant were claimed by said National Gas and Fuel Company to be an infringement on the rights, and that they would sue this defendant if this defendant used the same, and this defendant then and there notified the said plaintiff that this defendant would not take or accept said apparatus so agreed to be furnished as aforesaid; that thereupon said plaintiffs proposed that if this defendant would permit them to proceed and furnish and erect for this defendant said gas apparatus that before asking or receiving pay for the same that said plaintiffs would give to this *defendant a good and sufficient bond, with good security thereon*, indemnifying this defendant against all suits, damages, costs, and expenses that it might suffer by reason of said patents and said water-gas apparatus being an infringement of any other patents or rights of any other persons or corporation or by reason of any suit or suits being brought — this defendant on account of infringement on other patents or rights, & this defendant then and there accepted said offer and agreed that said plaintiffs might proceed and erect said water-gas apparatus and to pay them for the same, if otherwise according to the contract, upon said plaintiffs giving to this defendant a good and sufficient bons, with good security, conditioned as aforesaid; and thereupon, after said gas apparatus was erected by plaintiffs, said plaintiffs refused and neglected to give such bond as they had agreed to give as aforesaid, and still neglect so to do, and this the said defendant is ready to verify; whereupon it prays judgment, &c.

5th. And for a further plea in this behalf this defendant says *action non*, because it says that the said several supposed causes of action in said declaration mentioned are one and the same, *that*, the said supposed contract set forth in the 3rd plea by this defendant

pleaded herein; and this defendant avers that said contract was procured to be entered into by fraud and circumvention on the part of the plaintiffs; and this defendant avers that the aforesaid contract was executed by this defendant; that said plaintiffs falsely, fraudulently, and knowingly represented to this defendant that said water-gas apparatus named in said written agreement and which said plaintiffs were proposing to sell to this defendant was not an infringement on the rights of any other persons or corporation, and that said patents named in said agreement were not an infringement on any other patents, and that said defendant could use said water-gas apparatus at Paris, Illinois, free and undisturbed by any other person or corporation, and that no person or corporation claimed that plaintiffs' patents or water-gas apparatus was an infringement on them or their rights. Plaintiffs further falsely and fraudulently represented to said defendant that the National Gas Light and Fuel Company owned the Springer patent, and that said National Gas Light and Fuel Company did not claim that said water-gas apparatus or patents were an infringement on said Springer patents; all of which statements and representations were false, and said plaintiffs, when they made them, knew they were *flase*; and said defendant at this time stated to said plaintiffs
16 that if the defendant was liable to get into litigation about said water-gas apparatus and said patent & the right to use the said water-gas apparatus that the defendant would not buy the same, even if the said plaintiffs' patents were valid, and in reply thereto said plaintiffs assured said defendant that there was no danger of any litigation or suits growing out of the same; that formerly said National Gas Light and Fuel Company had claimed plaintiffs' apparatus and patents were an infringement on the Springer patent, but that said gaslight and fuel company had abandoned and given up such claim and had dismissed the suit at their costs that they had commenced on that account; all of which statements were false and known to be false at the time they were so made; and the said defendant avers that it relied upon said representations so made by the plaintiffs as aforesaid, and, confiding in *a is* representations and relying upon the same, then and there entered into said contract. The defendant further avers that afterwards, to wit, on or about the 20th day of July, A. D. 1889, this defendant was notified by the said National Gas Light and Fuel Company that said water-gas apparatus so contracted to defendant by plaintiffs was an infringement on their patents and rights, and that if defendant attempted to use the same that said National Gas Light and Fuel Company would commence suit against this defendant for damages and for an injunction against using said water-gas apparatus so contracted to be sold to this defendant by said plaintiff. The defendant avers that at that time no part of said water-gas apparatus had been erected, but said plaintiffs were on the ground preparing to erect the same, and thereupon the defendant notified said plaintiffs not to put up said apparatus, as this defendant would not receive the same on account of the claims made by the said Na-

tional Gas Light and Fuel Company and on account of the mis-
17 representations that had been made by said plaintiffs to procure the execution of said contract, and the said plaintiffs again repeated said false and fraudulent representations so set forth as above to induce the making of said contract, and further falsely and fraudulently stated that said gaslight and fuel company would not bring suit against said defendant, and that it was merely making threats to induce said defendant to buy a water-gas apparatus from them, and that they had no intention of bringing said suit; and plaintiffs further proposed that if said defendant would allow them to erect said water-gas apparatus that before asking for payment that they would give to the defendant a good and sufficient bond conditioned to save and keep harmless the defendant from all suits, costs, expenses, and damages of every kind and character that said defendant might suffer or be put to by reason of the use of said water-gas apparatus, and would defend at their own cost all suits that might be brought against this defendant and save & keep harmless this defendant by reason of said suits; and the said defendant, relying upon such representations and promises so made by the plaintiffs as aforesaid, consented that said plaintiffs might proceed and erect said water-gas appaeatus and to pay said plaintiffs for the same upon said plaintiffs giving bond as aforesaid and conditioned as aforesaid if said apparatus was otherwise according to contract, and that said defendant avers that said plaintiffs, in violation of their said agreement and promises, refused to give said bonds as aforesaid to indemnify said defendants as aforesaid and has always and still refuses and neglects to give said bond; and said defendant further avers that on the 29th day of July, A. D. 1889, said National Gas Light and Fuel Company commenced a suit in the circuit court of the United States of America in and for the southern district of Illinois against this defendant and Z. E. Powell, president of
18 this defendant company, for an infringement of its patents and for an injunction and for $50,000 damages; that immediately upon the defendant having notice of said suit it notified said plaintiffs of the fact and requested them to defend the same, and the plaintiffs then and there agreed to take charge of said case and defend the same, and did file an answer therein for defendant on the 30th day of September, A. D. 1889, and that said defendant avers that since that date said plaintiffs have taken no steps in the defence of said cause and have wholly abandoned such defence and said suit is still pending in said court undetermined, and said defendant is left liable to judgment in said cause. Defendant further avers that a few months after the commencement of said suit the defendant used said water-gas apparatus, but when the defendant found that plaintiffs would not or could not give them an indemnifying bond as aforesaid, and could not or would not and did not defend said suit and have the same disposed of, this defendant quit using said apparatus and has wholly ceased to use the same, and before the commencement of the suit notified said plaintiffs to take and remove said machine from the premises of this defendant, and

this the said defendant is ready to verify; whereupon it prays judgment, &c.

SELLAR,
For Defendant.

Filed March 22, 1892.

H. E. RIVES, *Cir. Clerk.*

19 STATE OF ILLINOIS, } ss:
Edgar County, }

Edgar Circuit Court, March Term, 1892.

HENRY PRATT & Co.
vs.
PARIS GAS LIGHT & COKE Co. } Assumpsit.

And the plaintiffs as to the plea of the defendant by it first above pleaded and whereof it has put itself upon the country doth the like, &c.

And the plaintiffs as to the second, third, fourth, and fifth pleas of the defendant by it above pleaded says that the same and the matters therein contained respectively in manner and form as the same are above pleaded are not sufficient in law to bar them, the plaintiffs, from having their aforesaid action, and that they are not by law bound to answer the same, and this they are ready to verify, &c.; wherefore, &c.

J. T. RICHARDS,
DYAS & VAN DYKE,
Plaintiffs' Attorneys.

The above bears the following endorsement:
Henry Pratt & Co. *vs.* Paris Gas Light and Coke Co. Demurrer to pleas. Filed March 31st, 1892. H. E. Rives, clerk. J. T. Richards & Dyas and Van Dyke, plaintiffs' attorneys.

20 STATE OF ILLINOIS, } ss:
County of Edgar, }

Edgar Circuit Court, September Term, A. D. 1892.

HENRY PRATT & Co.
vs.
PARIS GAS LIGHT & COKE Co. }

And for a further amended plea to the second plea filed herein the defendant says that the plaintiffs ought not to have and maintain their aforesaid action against it, the defendant, except as to the sum of one hundred dollars, because the defendant says that the said several supposed causes of action set forth in said declaration are one and the same, to wit, the supposed cause of action is on a supposed written contract dated January 8th, 1889, filed herein by the plaintiffs and marked "Copy of instrument sued on," in and by which said supposed written contract plaintiffs agreed at their

own proper cost and expense to do all the work and furnish all the materials for the execution and completion of a water-gas apparatus for defendant, to be erected and operated in accordance with patents granted to said plaintiffs April 22nd, 1884, and April 12th, 1887, together with any improvements which said plaintiffs may have, to consist of the following apparatus, to wit, one set of double gas-generators, two hydraulic seals, one vaporizor, one pressure gague, one test purifier can, one tubular boiler 3 x 10 feet, one full fire front, one set of grate bars, one safety valve, one feed-water injection and combination water gague, one steam gague, one blow-off cock, one back arch all set up and ready for brick-work one number 4 standard steel pressure-blower, one four-horse-power upright engine, one tubular condenser 3 x 12
21 feet, one feed oil tank to hold not less than 100 gallons, the above work to be set up and connected with all necessary steam, oil, and vapor pipes to make the same complete and ready for making gas, together with the right to use the above-named patents or improvements at the works of said defendant, at Paris, Edgar county, Illinois, for the sum of $4,850, to be paid in the following manner, to wit, defendant to pay the freight on material delivered (to be connected from final payment), to be paid in thirty days after the completion of said work and the same has been tested to the satisfaction of the said defendant; and the said plaintiff further agreed by and in said written agreement to save and keep harmless the said defendant against any suits which might be brought against it for infringements of any patents, and if any suit was brought to defend the same at plaintiffs' expense; and the said defendant avers that the plaintiffs have not given and assured to defendant the right to use said water-gas apparatus at Paris, Illinois, in said Edgar county, in accordance with patents granted to said plaintiffs April 22, 1884, and April 12, 1887, together with any improvements made thereon by said plaintiffs; and this*d* defendant avers that said supposed patents of April 22, 1884, and April 12, 1887, are void and are *in* infringement on patents before that time granted and issued by the Government of the United States, one to Theodore G. Springer, of date Feb'y 7th, 1882, No. 10032, issued and given for seventeen years from the date thereof, and one issued to Thaddeus S. C. Lowe, No. 167,847, dated September 1st, 1875; and the defendant further avers that said plaintiffs have not saved and kept harmless the said defendant against suits brought against *them* for infringement of said patents and claimed by said plaintiffs and have not de-
22 fended the same at plaintiffs' expense, but, on the contrary, the defendant avers that heretofore, to wit, on the 29th day of July, A. D. 1889, the National Gas Light and Fuel Company commenced a suit in the circuit court of the United States of America in and for the southern district of Illinois by bill in chancery against this defendant and Z. E. Powell, president of said defendant company, for an infringement of said patents No. 10032, issued as aforesaid to said Theodore G. Springer, and which had before that time been duly assigned by said Springer to said National Gas Light and Fuel Company, and for an injunction against this de-

fendant restraining — from using said water-gas apparatus so sold by plaintiffs to this defendant — for fifty thousand dollars damages and costs; and said defendant further avers that immediately upon this defendant receiving notice of said suit it requested said plaintiffs to defend it against said suit at their own expense, and then and there received notice of said plaintiffs that they would do so, but said plaintiffs have wholly refused to defend *them* against said suit or protect this defendant against said suit and from said costs and damages and have wholly failed to have the same tried or disposed of or settled in any way, and said suit is still pending in said court, and said plaintiffs still refuse and neglect to have the same tried or otherwise disposed of, and this defendant was compelled to and did cease using said apparatus for making gas so purchased of the plaintiffs as aforesaid heretofore, to wit, on the first day of March, A. D. 1891, and has wholly, by reason of the premises, ceased to use the same, and the said defendant thereupon tendered back to said plaintiffs said water-gas apparatus and requested said plaintiffs to remove the same before the commencement of this suit, to wit, on the 1st day of March, A. D. 1891, and as soon as it learned
23 definitely that said plaintiffs would not protect it against said suit; wherefore this defendant avers that the consideration of said contract has failed except as to said sum of one hundred dollars, and this the defendant is ready to verify; wherefore it prays judgment if the plaintiffs ought to have and maintain their aforesaid action except as to said sum of one hundred dollars.

SELLARS & DUNDAS,
Attorneys for Defendant.

Said instrument bears the following endorsement:
No. 7026. Henry Pratt & Co. *vs.* Paris Gas Co. Second amended plea. Filed September 15, 1892. H. E. Rives, cir. clerk. Sellars & Dundas, for defendant.

STATE OF ILLINOIS, }
County of Edgar, } *ss.*:

In the Circuit Court of Edgar County, to the September Term, A. D. 1892.

HENRY PRATT and JOHN J. RYAN, Copartners, &c., }
vs.
PARIS GAS LIGHT & COKE COMPANY. }

21 And the said plaintiffs, as to the plea of the said defendant by it first above pleaded and whereof it hath put itself upon the country, doth the like.

And the plaintiffs, as to the said plea of the said defendant by it secondly above pleaded, say that the said plaintiffs, by reason of anything by the said defendant in that plea alleged, ought not to be barred from having and maintaining their aforesaid action thereof against the said defendant, because they say that they, the plaintiffs, have given and assured to the defendant the right to

use the said water-gas apparatus at Paris, in said Edgar county, Illinois, in accordance with patents granted to them, the plaintiffs, April 22nd, 1884, and April 12th, 1887, together with any improvements made thereon by the plaintiffs.

And the plaintiffs deny that said patents are an infringement on patents before that time granted and issued by the Government of the United States to one Theodore G. Springer, of date February 7th, 1882, No. 10032, issued and good for seventeen (17) years from that date, or of one issued to Thaddeus S. C. Lorne, No. 167,847, dated September 21st, 1875.

And the plaintiffs aver that they have saved and kept harmless the said defendant against suits brought against it for infringement of such patents claimed by said plaintiffs and have defended said defendant against such suits at their (plaintiffs') expense and have defended said defendant and its president, Z. E. Powell, against said suit brought by the National Gas Light and Fuel Company against the said defendant in the circuit court of the United States of America in and for the southern district of Illinois by bill
25 in chancery, now pending in said circuit court of the United States of America.

And the plaintiffs deny that the said defendant was compelled to quit using said apparatus for making gas.

And the plaintiffs deny that the consideration of said contract in said second plea mentioned has wholly failed, and this they, the said plaintiffs, pray may be inquired of by the country, etc.

And the said plaintiffs, as to the said plea of the said defendant by it thirdly above pleaded, say that the said plaintiffs, by reason of anything by the said defendant in that plea alleged, ought not to be barred from having and maintaining their aforesaid action thereof against the said defendant, because they say that the execution of said written agreement in said plea mentioned was not procured and obtained by the plaintiffs from said defendant by the use of fraud and circumvention.

And the plaintiffs deny that before the execution of said contract they (the plaintiffs) falsely and fraudulently represented to the said defendant that said patents mentioned in said written contract and under which said water-gas apparatus was to be operated were not an infringement upon any other patents, and deny that the said statements and representations were at the time then and there false and untrue.

And the plaintiffs deny that they falsely and fraudulently represented that said patents were not an infringement on what is usually known as the "Springer patent."

And the plaintiffs deny that said representations were
26 untrue, and that the plaintiffs at the time knew that the same were untrue, and deny that the defendant stated to the plaintiffs before said contract was entered into that if said defendant was liable to be sued that said defendant would not purchase the same, and deny that the plaintiffs assured the said defendant that no suit would be brought against said defendant by said National Gas Light and Fuel Company or by any one else, or

that said National Gas Light and Fuel Company had abandoned all claim to the plaintiffs' patents for an infringement on their patents.

And the plaintiffs deny that the defendant, confiding in said representations aforesaid, then and there executed the said writing as aforesaid.

And the plaintiffs deny that they cannot defend said suit so commenced by said National Gas Light and Fuel Company against the said defendant in the circuit court of the United States of America for the southern district of Illinois, and deny that they have neglected or refused to have said suit tried or have neglected and refused to protect the said defendant, or that the defendant was compelled to cease using said water-gas apparatus, or that the defendant cannot use the same for any cause whatever, and deny that the said defendant has tendered back to the plaintiffs the said water-gas apparatus aforesaid and requested them to remove the same from the premises of said defendant, but the plaintiffs aver that they have a good and complete defense upon the merits *oo* said suit so brought by the said National Gas Light and Fuel Company in the circuit court of the United States of America for the southern district of Illinois.

And the plaintiffs deny that said patents so owned by them (the plaintiffs) are an infringement upon the said patents owned
27 by the said National Gas Light & Fuel Company, as *on* said plea alleged, and this the plaintiffs pray may be inquired of by the country, etc.

And the said plaintiffs, as to the said plea of the said defendant by it fourthly above pleaded, say that the said plaintiffs, by reason of anything by the said defendant in that plea alleged, ought not to be barred from having and maintaining their aforesaid action thereof against the said defendant, because they say that they did not before said contract was entered into or at any time falsely, knowingly, and fraudulently represent to the defendant that said water-gas apparatus and patents named in the third plea were not an infringement on any other patents or rights of any persons or corporation, and that no persons or corporation claimed that they were an infringement of the rights of any other person or corporation.

And the plaintiffs deny that the said defendant, relying upon said representations, entered into said contract.

And the plaintiffs deny that on or about the 20th day of January, 1889, when the defendant was notified by the National Gas Light & Fuel Company that said gas apparatus so sold to said defendant by the plaintiffs was an infringement on the rights of it, the said National Gas Light & Fuel Company, no part of said gas apparatus had been erected by said plaintiffs or that the plaintiffs were preparing to erect the same, and deny that the said defendant notified the plaintiffs that said National Gas Light & Fuel Company had notified said defendant that said patents on said water-gas apparatus agreed to be erected and furnished by the plaintiffs to said defendant were claimed by said National Gas Light & Fuel Company

to be an infringement on their rights, and that they
28 would sue said *said* defendant if said defendant used the same.

And the plaintiffs deny that said defendant would not agree to pay for or accept said apparatus so agreed to be furnished as aforesaid, and deny that thereupon the said plaintiffs proposed that if said defendant would permit the plaintiffs to proceed and furnish and erect for said defendant said gas apparatus that before asking or receiving pay for the same the plaintiffs would give to said defendant a good and sufficient bond, with good security thereon, indemnifying said defendant against all suits, damages, costs, and expenses that it might suffer by reason of said patents or said water-gas apparatus being an infringement of any other patents or rights of any other person or corporation or by reason of any suit or suits being brought against said defendent on account of the infringement on other patents or rights.

And the plaintiffs deny that it was by reason of any such promise on the part of the plaintiffs that they (the plaintiffs) were permitted by said defendant to proceed and erect said water-gas apparatus, and deny that it was by reason of any such promise on the part of the plaintiffs that the defendant agreed to pay the plaintiffs for the same, if otherwise according to contract, upon the plaintiffs giving to said defendant a good and sufficient bond, with good security, conditioned as aforesaid.

And the plaintiffs deny that they agreed at any time to give to the defendant a good and sufficient bond *both* conditioned as aforesaid, and this they (the said plaintiffs) pray may be inquired of by the country, etc.

And the said plaintiffs, as to the said plea of the said defendant fifthly above pleaded, say that the plaintiffs, by reason of
29 anything by the said defendant in that plea alleged, ought not to be barred from having and maintaining their aforesaid action thereof against the said defendant, because they say that the said contract set forth in the third plea by said defendant pleaded herein was not procured to be entered into by fraud and circumvention on the part of the plaintiffs, and deny that the said plaintiffs falsely, fraudulently, and knowingly represented to said defendent that said water-gas apparatus named in said written agreement and which said plaintiffs proposed to and did sell to said defendant was not an infringement on the rights of any other persons or corporations, and that said patents named in said agreement were not an infringement upon any other patents, or that said defendant could use said water-gas apparatus at Paris, Illinois, free and undisturbed by any other persons or corporation, or that no persons or corporation claimed that plaintiffs' patents or water-gas apparatus *was* an infringement on them or their rights.

And the plaintiffs deny that they falsely and fraudulently represented to the said defendant that the National Gas Light and Fuel Company did not claim that said water-gas apparatus or patents were an infringement on said "Springer patents," and deny that such representations, if the same had been made, were false, and deny

that the plaintiffs knew that they were false, and deny that the defendant stated to the plaintiffs at said time that if plaintiffs were liable to get into litigation about said water-gas apparatus or about said patent and the right to use the said water-gas apparatus that the defendant would not buy the same even if said patents were valid, and deny that in reply to any such statements said plaintiffs assured said defendant that there was no danger of any litigation or suits growing out of the same, and deny that they (the plaintiffs) stated to said defendant that formerly said National Gas Light &
30 Fuel Company had claimed plaintiffs' patents for an infringement on the said "Springer patent," or that said National Gas Light & Fuel Company had abandoned or given up such claim.

And the plaintiffs deny that any statements made by plaintiffs at the time of the making of said sale were false.

And the plaintiffs deny that said defendant relied upon any such representations so claimed to have been made by the plaintiffs as aforesaid or confided in said representations, or that by reason of said representations so alleged to have been made by the plaintiffs the said defendant then and there entered into said contract.

And the plaintiffs deny that the said defendant ever notified them (the plaintiffs) that it, the defendant, would not receive said water-gas apparatus on account of the claim made by the National Gas Light & Fuel Company or on account of any misrepresentation made by the plaintiffs to procure the execution of said contract.

And the plaintiffs deny that they ever made any false and fraudulent representations, as set forth and alleged in said defendant's fifth plea by it above pleaded.

And the plaintiffs deny that they at any time proposed that if the said defendant would allow them (the plaintiffs) to erect said water-gas apparatus that before asking for payment they would give to the defendant a good and sufficient bond conditioned to save and keep harmless the defendant from all suits, costs, expenses, or damages, of every kind and character, that said defendant
31 might suffer or be put to by reason of the use of said water-gas apparatus, and would defend at their own expense all suits that might be brought against said defendant and save and keep harmless said defendant by reason of such suits.

And the plaintiffs deny that said defendant, relying upon such representations and promises so alleged to have been made by the plaintiffs as aforesaid, consented that the plaintiffs might proceed and erect said water-gas apparatus, and deny that it was by reason of such promise to give such bond as aforesaid that the said defendant promised to pay the plaintiffs for the same upon the said plaintiffs giving bond as aforesaid and conditioned as aforesaid, if said apparatus was otherwise according to contract.

And the plaintiffs deny that they (the plaintiffs) have wholly abandoned the defense to said suit so brought by said National Gas Light & Fuel Company in the circuit court of the United States of America against the said defendant and Z. E. Powell, but the plaintiffs aver that they have defended, saved, and kept harmless the said defendant from and against said suit so brought by the Na-

tional Gas Light & Fuel Company against the said defendant in the circuit court of the United States of America for the southern district of Illinois, mentioned in said fifth plea.

And the plaintiffs deny that any representations in said plea alleged to have been made by the plaintiffs regarding said patents and relating to the question of the infringement of said patents upon any other patents were false, but the plaintiffs aver that said patents are not an infringement upon the patents of any other
32 persons or corporation; and this the said plaintiffs pray may be inquired of by the country, etc.

JOHN T. RICHARDS AND
DYAS AND VAN DYKE,
Attorneys for Plaintiffs.

Filed Sept. 15, 1892.

H. E. RIVES, *Clk.*

We, the jury, find for the defendant.

THOMAS BOONE.
ANTHONY FERRELL.
THOMAS D. WATSON.
G. W. ATHEY.
J. P. HAUGHTON.
MIKE GARVEN.
J. A. HETTON.
THOMAS LAWLESS.
WM. A. MURPHY.
W. H. McGEE.
SAMUEL STEPHENS.
A. BENNETT.

March Term, Edgar County Circuit Court, March 16, 1892.

HENRY PRATT & Co.
vs.
PARIS GAS LIGHT & COKE Co. } 7026. Assumpsit.

33 On application of the defendant the time to plead herein is extended until the second Thursday of the term.

March Term, Edgar County Circuit Court, April 11, 1892.

HENRY PRATT & Co.
vs.
PARIS GAS LIGHT & COKE COMPANY. } 7026. Assumpsit.

Come now the said plaintiffs, by their attorney, and file their demurrer to the 2nd, 3rd, 4th, and 5th pleas *at* the said defendant herein filed, and said demurrer is now argued by counsel, and the court, being advised, does sustain said demurrer to the said second plea and holds that said second plea is insufficient and does overrule said demurrer to the said third, fourth, and fifth pleas, and holds said pleas to be sufficient.

And now defendant asks leave to amend its second plea, which said leave is allowed, and the plaintiff- *is* allowed to file replication to said third, fourth, and fifth pleas.

Fifth Day, Sept. Term, 1892, Edgar County Cir. Court, Sept. 16, 189–.

HENRY PRATT & Co.
vs.
PARIS GAS LIGHT & COKE COMPANY. } 7026. Assumpsit.

Comes now the plaintiffs and file their demurrer to the second plea as amended herein, and the court, having heard the arguments of counsel on said demurrer and being fully advised in the premises, doth overrule said demurrer and — to plaintiffs to reply.

34 Fifth Day, March Term, Edgar County Cir. Court, March 17, 1893.

HENRY PRATT & Co.
vs.
PARIS GAS LIGHT & COKE COMPANY. } 7026. Assumpsit.

Comes now the parties herein, attended by counsel, and, to try the issue herein joined, comes on call a jury of twelve good and lawful men, to wit, Thomas Boon, Anthony Ferrell, Thomas D. Watson, G. W. Athey, J. P. Houghton, Mike Garvin, J. A. Hilton, Thomas Lawless, William A. Murphy, W. H. McGee, Samuel Stephens, and A. Bennett, who are selected, tried, and sworn a true verdict to render according to the evidence, and the jury now hear the evidence and arguments of counsel thereon, receive the instructions of the court, and now retire, in charge of an officer, to consider of their verdict, and, having considered and agreed upon the same, return into court their sealed verdict, as follows:

"We, the jury, find for the defendant."

And now comes the plaintiffs, by their attorneys, and move the court to set aside the verdict of the jury herein and to grant a new trial, and the court takes time to consider said motion.

28th Day, March Term, Edgar Co. Circuit Court, April 13, 1893.

HENRY PRATT & Co.
vs.
PARIS GAS LIGHT & COKE COMPANY. } 7026. Assumpsit.

The court, having considered the motion for a new trial herein, doth overrule said motion; to which ruling of the court and the rendering of the judgment herein the plaintiffs then and there excepted and prayed for an appeal to the appellate court for the
35 third district of the State of Illinois, which was allowed on plaintiffs filing bond herein in the sum of $500.00, con-

ditioned according to law, with good security, to be approved by the clerk of this court, said bond and bill of exceptions to be filed herein within 40 days from this date.

32nd Day, March Term, Edgar Circuit Court, May (5th) Fifth, 1893.

Ordered that the Edgar circuit court be now adjourned until court in course.

Bill of Exceptions. Filed May 15, 1893. *J. L. Vance, Circuit Clerk.*

STATE OF ILLINOIS, } ss:
Edgar County, }

In the Circuit Court, March Term, A. D. 1893.

HENRY PRATT *et al.*
vs.
PARIS GAS LIGHT AND COKE COMPANY. } Assumpsit.

Bill of exceptions.

Be it remembered that on the 15th day of March, A. D. 1893, at the court-house, in the city of Paris, the county of Edgar, State of Illinois, this cause came on for trial before the Honorable Ferdinand Bookwalter, judge, and a jury, John T. Richards, Joseph Dyas, — Daniel F. Baum appearing on behalf of the plaintiffs, and H. Van Sellars and F. W. Dundas appearing on behalf of the de-
36 fendant, and the plaintiffs, to maintain the issues on their part, introduced the following evidence, to wit:

37 *Index.*

	Dr. ex.	Cr. ex.	Redr. ex.	Recr. ex.	Recalled.
Henry Pratt	1	181	204	205	152
C. W. Powell.....	9	35	..	..	30
Jas. A. Eads	15	28–208	..	..	206
Z. E. Powell	39	91–112	112	..	73–122–208
Frank Handley	46	..	120	..	114
Martin Dial.....	47	53	65	71	

Contract, page 2.
Letters from Z. E. Powell to Henry Pratt & Co., page 74; bond, page 37.
Letters from C. W. Powell to Pratt and Co., pages 123–181.
Transcript from the United States circuit court, page 124.
Subpœna and records from the United States circuit court from Indiana, pages 148, 149.
Plaintiffs given instructions, pages 210, 216.
Plaintiffs refused instructions, pages 217–220.
Defendant given instructions, pages 221–223.
Defendant refused instructions, page 224.
Court's instructions, pages 225, 226.
Plaintiffs' motion for a new trial, page 226.
Judge's signature to bill of exceptions, page 227.

38 HENRY PRATT, plaintiff, being first duly sworn, was examined in chief by John T. Richards, and testified in his own behalf as follows:

Q. State your name.

A. Henry Pratt.

Q. What business were you engaged in during the year 1889, Mr. Pratt?

A. I was working a water-gas apparatus.

Q. Did you during that time enter into any contract with the Paris Gas Light and Coke Company?

A. I did.

Q. You may look at the paper now shown you and state whether that is the contract which you made with the Paris Gas Light and Coke Company (counsel handing plaintiff contract).

A. Yes, sir.

Q. Who composed your firm at the time this agreement was made?

A. Myself and a man named—by the name of Mr. Ryan.

Q. John J. Ryan?

A. Yes, sir.

Q. The firm's name was Henry Pratt and Company?

A. Yes, sir. I was acting as the principal in the firm. He had an interest.

Q. You are a member of that firm?

A. Yes, sir.

Q. Who acted on the part of Henry Pratt and Company in making this contract?

A. I did.

39 Mr. RICHARDS: If the court please, I think right here I will offer in evidence the contract, as I desire to question this witness in relation to it.

Mr. SELLARS: Do you withdraw the witness?

Mr. RICHARDS: No.

The COURT: Do you withdraw the witness for that purpose?

Mr. RICHARDS: I don't see any necessity of withdrawing the witness for that purpose.

The COURT: Is there any objection made to the introduction of this contract?

Mr. RICHARDS: If there is no objection, I will not offer it just now.

Mr. SELLARS: We make no objection.

Plaintiff read contract as follows, January the 8th, 1889, and is as follows:

EXHIBIT "A."

This contract and agreement made and entered into this eighth day of January, one thousand eight hundred and eighty-nine, by and between the Paris Gas Light and Coke Company, party of the first part, and of Paris, Edgar county and State of Illinois, and

Henry Pratt & Co., of Chicago, county of Cook and State of Illinois, party of the second part, witnesseth that the said party of the second part, do by these presents covenant and agree, with the said party of the first part, that in consideration of a sum hereinafter named, that the part- of the second part, will at their own proper cost and expense, do all the work and furnish all the material for the erection and completion of a water-gas apparatus, erected and operated in accordance with patents granted to Pratt & Ryan, April 22, 1884 and April 12, 1887, together with any improvement,
40 which the said party of the second part may have, to consist of the following apparatus, to wit: one set of double gas-generators, two hydraulic seals, one vaporizor, one pressure gauge, one test light purifier can, one tubular boiler, 3 x 10 feet, one full fire front, one set of grate bars, one safety valve, one feed-water injector, one combination water gauge, one blow-off cock, one back arch, all set up and ready for brick-work, one No. 4 Sturtevant steel pressure-blower, one four-horse-power upright engine, one tubular condenser, 3 by 12 feet, one feed oil tank to hold not less than 100 gals., the above work to be set up and connected with all necessary steam, oil and vapor pipes, to make the same complete and ready for making gas, together with the right to use the above-named patents or improvements at the works of the said party of the first part at Paris, in above-named county and State, for the sum of four thousand eight hundred and fifty dollars, to be paid in the following manner, to wit: to pay freight on material delivered (to be deducted from final payment) to be paid in thirty days after the completion of said work and the same has been tested to the satisfaction of said party of the first part. The said party of the second part further agrees to save and keep the said party of the first part harmless against any suits which might be brought against it for infringements of other patents, and if such suit is brought we will defend the same at our expense, and the said party of the second part further agree to complete the said work on or before the first day of March, 1889, and if the said party of the second part fail to complete the same on or before the said first day of March, the said party of the second part will forfeit and pay to the
41 said party of the first part the sum of ten dollars per day for each & every day until the said work shall be completed, said sum to be deducted out of any money which may be due the said party of the second part.

(Signed) PARIS GAS LIGHT AND COKE CO.,
By Z. E. POWELL, *President.*
HENRY PRATT & CO.,
By H. PRATT.

Q. Mr. Pratt, you may state what you did in pursuance of that contract (handing witness contract).

A. I completed the apparatus in accordance to that contract, and completed, I think——

Mr. SELLARS: We object to that statement.

The COURT: Yes; that is a conclusion rather than a fact. Objections sustained and excluded.

Q. You may refer to the contract and state from the contract what you did.

A. I filled the contract.

Q. State the different items that you furnished.

A. I furnished the set of double gas-generators, steel pressure engine and all fixtures belonging to a boiler, a feed-water injector, one tubular condenser, and all necessary pipes belonging thereto, with a vaporizor, &c.

Q. And all the items referred to in that contract?

A. Yes, sir.

Mr. RICHARDS: I understand there has never been any dispute as to the fact of these being furnished.

42 Q. Did you send to The Paris Gas Company, the defendant in this case, any bill stating the amount that was due Pratt and Ryan for this work?

A. Yes, sir.

Mr. SELLARS: Is that in writing? It must be in writing if there is a bill for it. We object.

Mr. RICHARDS: You have it.

Q. Did you have any talk with any of the parties in relation to the work after it was constructed?

A. I did.

Q. What was said? With whom did you have this conversation?

A. Mr. Z. E. Powell and Mr. Eads.

Q. Was this after the work was completed?

A. Yes, sir.

Mr. SELLARS: We object to this. The question or answer should be when it was done.

The COURT: Yes; that is a conclusion.

Q. Well, when was it, Mr. Pratt?

A. I don't know that I could remember the date.

Q. About the date?

A. It was the fore part of April.

Q. What year?

A. 1889.

Q. What was said in relation to the working of the apparatus after you had completed it?

A. It was working satisfactory.

43 Q. Was there any objection ever made to you as to the proper working of the apparatus?

Mr. SELLARS: We object. He should state what was said.

The COURT: Yes; let him state what was said between the parties.

Q. Where did that conversation take place?
A. In this city. In relation to what?
Q. In relation to the plant.
A. I don't know as I could state any particular conversation. At the time I was down, in April, I don't remember as there was anything said in particular. After that I received letters stating it was all right.

Mr. SELLARS: That is not competent.
The COURT: Make your objections. I can't rule without making your objections.
Mr. SELLARS: We want that stricken from the record.
(The last part of answer excluded by the court.)
To which ruling of the court the counsel for the plaintiffs then and there duly excepted.

Q. Have you in your possession any letters which you received from any of the officers of the gas company?
A. Yes.
The COURT: Talk loud so the jury can hear you.

(Plaintiff producing letter.)

A. There is one that refers to it (handing counsel letter). This last sentence——
Q. When did you do the last work on this plant for the gas company?
A. It was about the 27th of February.
44 The COURT: What year?
A. 1889—that is, the last construction.
Q. What did you do immediately following that?
A. We operated it for thirty days after the completion of the work.
Q. That's what you call testing, is it?
A. Yes.
Q. This letter which you hand me is the one you received from Mr. Z. E. Powell, is it?
A. Yes, sir.
Q. About what date did you receive this letter?
A. That was in '89, I think, April; I am not sure about the date now; April the 30th; that is the one I have reference to; this is '89; this was April the 3rd; they broke an excentric strap and sent me that.

Mr. RICHARDS: I desire to offer this letter in evidence.
Mr. SELLARS: That is one of our letters.
Mr. PRATT: You may read this letter.
Letter marked Plaintiff-' Exhibit "B."

PLAINTIFFS' EXHIBIT "B."

PARIS GAS LIGHT AND COKE COMPANY,
PARIS, ILLINOIS, *April 13th*, 1889.

Henry Pratt & Co., 875 So. Halstead St.

DEAR SIRS: We wired you today to send us the top half excentric strap & rod for our engine. The rod shows it was about half broken off before it was finally broken, and how it could have been br*k*oen is a mystery to us.

What are the National Gas Light and Fuel Co. doing? They are sending us threatening letters, &c. Let us hear from you on
45 this matter. Our works are doing very well, outside the above break.

Truly,

Z. E. POWELL.

Q. What did you do in reply to this letter in regard to the break?
A. I sent them an excentric strap complete.
Q. Have you heard of any further breaks since then?
A. No, sir.
Q. Mr. Pratt, have you received the amount due on this contract; if so, what have you received on this contract?
A. Will you please repeat the question?
(Reporter reads the question.)
A. I haven't received anything except what I gave the company credit for on account of freight and one hundred dollars that I allowed them for raising the roof or raising the building.
Q. What was the total amount of credits which you refer to?
A. I have a memorandum; $229.45 was the total credits which I gave them, and I charged them for 300 firebrick, which was $7.50; they were left there.
Q. What does the balance amount to?
A. The balance is $4,628.05.
Mr. SELLARS: What is the balance?
A. Balance due on the account?

Mr. SELLARS: That we object to.

Q. On the contract.

Mr. SELLARS: That we object to in that form, if the court please, the balance due on the contract.
46 The COURT: Well, what he claims to be due.

Q. Have you computed the interest on that, Mr. Pratt, from the time you received this letter?
A. The interest would amount to $1,062 up to date, making a total of $5,960.
Q. That is the amount you claim to be due now?
A. Including the interest.
Q. At what rate of interest? Yes.
A. Six per cent.

The COURT: Only five per cent. from July 1st.

No cross-examination.

Counsel for the plaintiffs offered in evidence contract marked Plaintiffs' Exhibit "A" and letter marked Plaintiffs' Exhibit "B."

And the plaintiffs here rested their cause.

Defense.

And the defendant, to maintain the issues on its part, introduced the following evidence, to wit:

CHARLES W. POWELL, a witness called on behalf of the defendant, being first duly sworn, was examined in chief by F. W. Dundas, and testified as follows:

Q. Give your name to the reporter.

A. Charles W. Powell.

Q. Are you a member of the Paris Gas Light and Coke Company?

A. Yes, sir.

47 Q. During the year 1889?

A. Yes, sir.

Q. Do you know of the making of the contract testified to by the former witness—about the time it was made?

A. Yes, sir; I heard of it.

Q. State what, if any, notice you received from the National Gas Light and Fuel Company after the making of this contract that your company would be sued for the infringement of their patents.

Counsel for the plaintiffs ob-ects on the ground that the same is incompetent, and that the notice is the best evidence, and, second, under the pleas, the evidence is not competent under the contract.

The COURT: It is not in the original contract?

Mr. DUNDAS: No, sir; it is set out in the plea, and the plea is held good by this court at the former term.

Now, we propose to show by Mr. Powell that before this apparatus was put up he, as an officer of this defendant company, was notified by the National Gas Light and Fuel Company—a verbal notice—that this apparatus was an infringement upon their patent, and that they would bring suit for damages if the Paris Gas Light and Coke Company continued to put up and use this apparatus.

This was before the apparatus was put up, and that this notice which Mr. Powell received was communicated to Pratt and Company by the Paris Gas Light and Coke Company, and Pratt and Company were notified that, in accordance with the inducements under which the Paris Gas Light and Coke Company was led into this contract, it would refuse to allow this apparatus to be put up and would refuse to use and pay for it.

48 The COURT: Now, read that plea. I want to understand the plea first before you finish your argument.

Mr. DUNDAS: I will read the plea.

"And for a further plea in this behalf the defendants says *action now*, because it says that the said several supposed causes of actions in said declaration mentioned are one and the same, to wit, the said supposed contract set forth in the third plea by this defendant pleaded herein; and this defendant avers that before said supposed contract was entered into that the said plaintiffs falsely, knowingly, and fraudulently represented to this defendant that said water-gas apparatus and patents named in said third plea were not an infringement on any other patents or rights of any person or corporation, and that no person or corporation claimed that they were an infringement upon the rights of any other person or corporation, and this defendant, relying upon such representations, entered into said contract; that afterwards, to wit, on or about the 20th day of January, A. D. 1889, this defendant was notified — the National Gas Light and Fuel Company that said gas apparatus sold to this defendant by plaintiffs was an infringement on its rights, and if this defendant used the same that suit would be brought against this defendant for damages or for an injunction to restrain this defendant from using water-gas apparatus to be furnished by said plaintiffs; that at the time no part of said gas apparatus had been erected by said plaintiffs, but said plaintiffs were at Paris preparing to erect the same; that thereupon this defendant notified said plaintiffs that said National Gas Light and Fuel Company had notified said
49 defendant that said patents and said water-gas apparatus agreed to be erected and furnished by said plaintiffs to this defendant were claimed by said National Gas and Fuel Company to be an infringement on their rights, and that they would sue this defendant if this defendant used the same, and this defendant then and there notified the said plaintiffs that this defendant would not take or accept said apparatus so agreed to be furnished as aforesaid; that thereupon said plaintiffs proposed that if this defendant would permit them to proceed and furnish and erect for this defendant said gas apparatus that before asking or receiving pay for the same that said plaintiffs would give to this defendant a good and sufficient bond, with good security therein, indemnifying this defendant against all suits, damages, costs, and expenses that it might suffer by reason of said patents and said water-gas apparatus being an infringement of any other patents or rights of any other persons or corporations or by reason of any suit or suits being brought against this defendant on account of infringements upon other patents or rights, and this defendant then and there accepted said offer and agreed that said plaintiffs might proceed and erect said water-gas apparatus, and to pay for the same, if otherwise according to the contract, upon said plaintiffs' giving to this defendant a good and sufficient bond, with good security, as aforesaid; and thereupon, after said gas apparatus was erected by plaintiffs, said plaintiffs refused and neglected to give such bond as they had agreed to give as aforesaid and still neglected so to do, and this the said defendant is ready to verify; whereupon it prays judgment."

Where is the contract? I have it here; I have a copy of it. The contract reads as follows: The said party of the second part further

agrees to save and keep the said party of the first part harmless against any suits which might be brought against it for infringements of any patents, and if such suit is brought we will defend the same at our expense, and so on.

50 We propose to show by Mr. Powell he was notified, and that they went on and put up this apparatus, and that the defendant here would be sued for an infringement for using the apparatus; that it was an infringement of the National Gas Light patent; that the defendants notified the plaintiffs here that they were threatened with suit and were about to be sued if this apparatus was put up and used, and that the plaintiffs, Pratt & Company, entered into a new agreement with the defendants here, which is set up in this plea, that if the defendants would allow the plaintiffs to go on and put up this apparatus and use it that the plaintiffs would furnish a good and sufficient bond, and such a bond as the defendants would approve, before they would call upon the defendants to pay for the apparatus.

We expect to show that agreement and show that it was an agreement made after the Paris Gas Light Company had been notified that they would be sued and after the Paris Gas Light Company had notified Pratt and Company that they were about to be sued and refused to go on with the contract. Then, with an additional inducement to have the defendants to go on with this contract, Pratt and Company entered into this agreement with them.

Mr. RICHARDS: If the court please, this contract bears date the 8th of January. The plea alleges that the notice from the fuel gas company was received on or about the 20th of January. It doesn't allege what they now attempt to prove by this witness—that it was received before.

Mr. DUNDAS: After that contract was signed and before the apparatus was put up.

51 Mr. RICHARDS: That notice was given after the contract was signed. It seems to me it is entirely immaterial. Will they be permitted to show, in the absence of a written agreement—it don't pretend to show there was any written agreement between the company changing the agreement, but they seek here by oral testimony to show there was a change, where was the necessity, according to the terms of the agreement, as they set out in the plea, "to keep them harmless"—that there was an additional agreement made and without any valid consideration for the giving of the bond? They certainly can't be permitted to show anything of that kind.

Mr. SELLARS: Can't we prove our plea?

Mr. RICHARDS: You must introduce written evidence to that fact.

The COURT: What were the replications filed to that plea?

Mr. RICHARDS: General denial.

The COURT: If I remember rightly, that plea is based upon this theory, that the defendant claims the original contract was fraudulently entered into. That is alleged in that plea, if I remember right. When I held that plea good it was upon that basis.

Mr. DUNDAS: We expect to follow it up and show that the repre-

sentation was made, in the first instance, that the defendant should not be sued, and that was an inducement for them signing the contract. They then notified the plaintiffs, and they offered to give a good bond.

The COURT: I think the plea is good if the allegations of the plea *is* sustained by the evidence. Of course, the court can't say what amounts to fraud in this case. If there was any, that will be for the jury. Unless you prove that, I don't think there would
52 be a good consideration for the new premises.

The plaintiffs called upon the defendants and the new agreement was made. A new arrangement was made, and that new arrangement was set out in the plea. Of course, if these allegations are proven, that would be a good defense, I think.

By permission of the court, witness withdrawn.

JAMES A. EADS, called on behalf of the defendant, being first duly sworn, was examined in chief by F. W. Dundas, and testified as follows:

Q. Were you a member of the defendant company at or before this alleged contract was drawn with the plaintiffs?

A. Yes, sir.

Q. Did you have any conversation with the plaintiffs or either of them in regard to their apparatus before this contract was entered into?

A. I had with Mr. Pratt; I hadn't with Mr. Ryan.

Q. This is Mr. Pratt, who has just testified?

A. Yes, sir.

Q. You may state fully when and where that conversation took place, or the conversations, and substantially what it or they were.

A. It was in my office, the same day that the contract was signed, I think; that is my recollection about it; either that day or the next. It was the same time, I think, the contract was signed, before they left the office. Mr. Z. E. Powell and Mr. Robert Parrish came to my office, and Mr. Pratt and Mr. Zed. Powell stated that
53 Mr. Pratt was wanting to sell the company a gas apparatus, or water-gas apparatus. Mr. Powell and Mr. Pratt had had a good deal of talk, as I understand, between them before that time in regard to the process and in regard to the working of this concern that I don't know anything about, but when they came I told Mr. Pratt there was one thing about that matter that I wanted to be assured about, and that was — there was no infringement upon any patent. I told him I had had a good deal of trouble in railroading by being annoyed with these patents, and we didn't propose buying it if there was anybody claiming any right to it, or if it was an infringement upon anybody. I told him I heard there was such a thing as the Springer water-gas apparatus, but I didn't know anything about these machines for making gas, and I asked him about that. He said that there was such a patent, but that Springer had sold the patent to the National Gas Light and Fuel Company; that they were the owners of the Springer patent. I think he said there

were several of them. He told me that at one time the Springer or the owners of the Springer patent had claimed it was an infringement upon their patents, and that they had filed something, I don't know what—some objection to it, anyhow, in the Patent Office in Washington. I don't know the technical names of them, but they had filed objections, and that they had defeated them there, and afterwards they had commenced a suit against them up in Iowa, or rather against the parties they had sold to. I don't know whether he said against them, but that they had dismissed that suit and abandoned it, and that they made no further claim on it. He went on to explain to me that there was no infringement. Of
54 course, I didn't know anything about that.

I told him I didn't care whether it was an infringement or not, but we wouldn't buy it if they claimed it was an infringement; that we couldn't afford to carry on litigation.

He said that they had claimed it at one time, but they had dismissed their suit and did not now claim it was an infringement. He said he knew all about their patent; that he had worked for the Springer company. I think he said he was working for them at the time he made this invention.

Mr. SELLARS: State all the conversation there was.

A. Well, I think that is substantially all. I stated the facts to him. After these statements from him we made the agreement.

(DUNDAS:)

Q. Was there anything said in connection with the Springer people and the National Gas Light and Fuel Company having abandoned the claim? Was there anything said as to what these people would do in the future, in that conversation?

A. Well, I don't know——

Counsel for the plaintiffs objects.

WITNESS: I was going to say that I don't recollect that he said anything about that. I know he stated absolutely—he may have stated that, but I don't recollect it. I know he stated positively that they had abandoned the claim and made no claim to it. There was a good deal talk there, and Mr. Pratt was a pretty good talker, and I don't pretend to recollect everything that was said there. He may have said that also.

Q. What, if anything further, did he say—that is, in regard to his familiarity with the Springer patent and its workings?

A. He said he had worked for the Springer people, and he knew all about their patents and apparatus, and that this apparatus that he proposed to sell us was not an infringement upon that, and that they didn't claim it was. They had claimed it at one time, but didn't then, and that they had abandoned their claim.

The COURT: What reliance was placed in these statements?
55 A. Why, that we wouldn't take his contract, and we wouldn't—there wouldn't have been any contract made if he had not made this statement that they had abandoned their claims. I was the attorney, and there wouldn't have been any contract

made unless he had made the statement. I didn't propose to have any controversy.

(By SELLARS:)

Q. Was that statement made to him?

A. I stated to him distinctly, as he was explaining the matter to me, that it wasn't any infringement; that we wouldn't make any contract if there was any claim that it was an infringement. I couldn't understand the matter, because I didn't have sense enough in that line to understand it.

Q. What do you know of the plaintiffs being notified that you were threatened with litigation by the National Gas Light and Fuel Company?

Objected to as immaterial.

The COURT: Do you expect to show that the defendants had been imposed upon by the plaintiffs?

Mr. DUNDAS: Yes, sir; and that they were notified that the apparatus couldn't go in because of the conditions or inducements which led to the signing of that contract *was* false. They recognized that as being sufficient consideration to enter into a new promise; that they would go on and put in the apparatus, and that they would furnish a satisfactory indemnifying bond.

The COURT: Do you expect to show that these representations were fraudulent?

Mr. DUNDAS: Yes, sir.

Mr. RICHARDS: There is no evidence before the court up to this point to show that there was any fraudulent representation. The mere fact that Pratt represented his apparatus was not an in-
56 fringement of the apparatus of the Springer did not constitute fraud. Even though it was not true, it did not constitute fraud. It was a mere expression of opinion on the part of Pratt that it was not an infringement. Now, he had a right to suppose after the contest to which he had referred *to* in the Patent Office, and that they had sought to overthrow his patent, and the Commissioners of the Patent Office issued a patent to him—he had a right to suppose that his patent was a valid one. He had a right to suppose it was not an infringement, and the mere statement by him that it was not such an infringement does not constitute *d*raud to enable them to defend this case in this matter. There must have been some intention to deceive.

Mr. SELLARS: We are not done yet.

Mr. RICHARDS: They are done so far as that witness' testimony is concerned. They have not shown that there was anything but fair dealing between these men.

The COURT: But there is a distinction between an opinion and an expression of a fact. If he knowingly and falsely stated as a matter of fact that it was not an infringement, if they relied upon the other side, it might amount to fraud.

Mr. RICHARDS: Mr. Eads said that the representations made by Pratt *was* that there would be no suit. He said that he told Mr. Pratt

if there was any danger of the company being sued or annoyed on account of an alleged infringement that they wouldn't make this contract. That is his statement. That was the mere expression of opinion. How could anybody or Mr. Pratt tell whether there would be suits or not. He could only express his opinion upon that subject. If the court has any doubt about that I have a case in the 48th Iowa I would like to read.

57 WITNESS: What I stated—I told him that these parties, if they claimed this to be an infringement that we wouldn't take it, and he stated they did not claim it, but they had at one time, but they had abandoned their claim. That's what I stated.

Mr. DUNDAS: I think we shall be able to show also at the time these statements were made by Mr. Pratt to Mr. Eads and Mr. Powell that there was a suit pending at Goshen, Indiana, against the purchasers of this very same apparatus and by these same Springer people, and was pending just at or about that time. Mr. Eads said that Mr. Pratt said that as a matter of fact.

WITNESS: That he knew all about the apparatus, and worked for the Springer people, and that he knew there was no infringement.

The COURT: Of course, the court can't say what weight should be given to the evidence; that is for the jury. If he ventured to express an opinion about the matter, that is not fraud. If he falsely and knowingly *and* states as a matter of fact that a certain thing exist- and the other side relies upon it, that might amount to fraud. This plea alleges that was true and that was the basis of this new promise. This question is now leading up to the new promise. Under that theory it will be for the jury to say whether the allegations of that plea have been proven, and, with the distinct understanding all the time that a mere expression of opinion does not amount to a warranty or amount to fraud, I will admit it. A man may praise his property, but whether it is an expression of fact, whether he stated as a matter of fact those things were true, will be for the jury to say from all of the evidence. With the promise of the attorney

58 that he will connect, and if it is proper evidence to prove the different allegations of the plea, it may go in.

Objections overruled; to which ruling of the court the *the* counsel for the plaintiffs then and there took exception.

Q. I will ask you if there was anything said in regard to that conversation.

Mr. RICHARDS: I desire to exclude the statement made by the witness during this discussion from the record.

The COURT: Yes; that part will be excluded what he claims he did say.

Mr. RICHARDS: Everything except his answer to the last question will be excluded.

The COURT: Yes; what he claims he did say.

Q. I will ask you, Mr. Eads, if there is anything further in that conversation that you remember of that you have not stated.

A. I don't recollect of anything.

Q. What, if anything, do you know of the plaintiffs in this suit receiving a notice from the Paris Gas Light Company in regard to the latter being threatened with litigation by the National Gas Light and Fuel Company?

Mr. RICHARDS: Of your own knowledge, Mr. Eads.

A. The first that I know about them receiving any information about this matter—I don't know how to tell it; it was after the notice was received from C. W. Powell.

(By SELLARS:)

Q. That was the notice—a verbal notice?
A. Yes; I think so; it was so far as I know.

Mr. RICHARDS: That answer is objected to; therefore I move that the answer be stricken out.

59 Mr. SELLARS: What for?

The COURT: Where is the source of information that they had a right to rely upon?

Mr. SELLARS: We expect to show by Mr. Powell——

Mr. DYAS: I understand this statement made by Mr. Eads is in relation to the information received from Charlie Powell.

Mr. SELLARS: We propose to con-ect this through Charlie Powell.

The COURT: Do you expect to show that you communicated that to the plaintiffs here?

WITNESS: Yes, sir; not to Mr. Pratt, but to Mr. Ryan.

The COURT: And that you received this notice through this source?

WITNESS: Yes, sir.

The COURT: Well, it may stand if you expect to connect it; if you don't, it will be excluded.

To which ruling of the court the counsel for the plaintiffs then and there duly excepted.

WITNESS: Well, I received notice from C. W. Powell that the National Gas Light and Fuel Company was claiming that this was an infringement—I think a week or two or three weeks after the contract was made—that this Pratt and Ryan apparatus that they were putting up was an infringement, and I directed Mr. Zed. Powell to go and tell Mr. Ryan of that fact and to notify him that we didn't want his apparatus and wouldn't take it.

(By SELLARS:)

Q. What fact did you tell him to tell him?
A. That this National Gas Light and Fuel Company was claiming that this was an infringement upon their patent and they would sue us if we put it in.

60 (By DUNDAS:)

Q. What do you know of Mr. Ryan getting that notice that you sent to him by Mr. Zed. Powell?

A. I know it from this: Simply because the next day or two Mr. Ryan and Mr. Powell met me at my office or on the street and talked about the matter, and I told Mr. Ryan we didn't want that concern because we didn't want any litigation about it, and he said if we would go ahead and put it in that they were able to give us a good bond, and that they were able to give us a good indemnifying bond and good security, even up to ten thousand dollars. I still didn't want to do it, but Mr. Powell did.

Q. When, with reference to the payment for this plant by your people, was the bond to be given?

A. Well, it was before they got the money. Mr. Ryan remarked that we had the money all in our own hands. He said also in that conversation that there was a suit pending either against them or against the men that they sold to in Goshen, Indiana, and they expected to get that tried in June and that would settle it.

(By SELLARS:)

Q. By whom?

A. By the National Gas Light and Fuel Company.

(By DUNDAS:)

Q. Did he say how long that suit had been pending?

A. I can't say that he did. I don't know as he did say how long.

Q. This conversation was about the 20th of January?

A. Why, I can't tell exactly. I think somewhere along there. It was about the time they were getting their stuff here and was commencing to put it up.

Q. In your judgment, how long was it after this contract?

A. Well, I judge probably two or three weeks—somewhere along there; I can't recollect exactly.

61 Q. Well, what was done by your people in regard to the last contract?

A. Well, we went on and put up the works, and I prepared that bond and sent it up to Mr. Powell, or had Mr. Zed. Powell to do it.

(By SELLARS:)

Q. Is that it (handing witness bond and witness examining the same)?

A. I think that is the same bond. I looked over it this morning. I dictated it and Mr. Powell wrote it.

Q. What is the amount?

A. Seven thousand and five hundred dollars.

(By DUNDAS:)

Q. We will offer that bond in evidence. Do you know whether anything was done by the plaintiffs in this suit in regard to signing that or any other bond?

A. They never signed that one or any other that I ever heard of.

Q. Did you have any personal interview with either of the plaintiffs in regard to it?

A. I don't think I did. There might possibly have been something said about it when Mr. Pratt was here.

Q. Do you remember a conversation in the court-house yard with Mr. Pratt in relation to the bond when Mr. Zed. Powell was present?

A. Well, I can't recollect it, if I did. I recollect Mr. Pratt being down here, and we were talking over these matters, but what was said about it I don't recollect.

Q. I will ask you if you remember a conversation in the court-house yard with Mr. Pratt when Mr. Powell was present in which something was said in regard to sending a bond to Chicago and have it signed.

Counsel for plaintiffs objects as leading. Objections overruled; to which ruling of the court the counsel for the plaintiffs then and there duly excepted.

62 A. Well, I know there was an arrangement made to send a bond there, but whether it was made with Mr. Pratt or not I can't recollect. I remember talking to Mr. Pratt several times about the matter. I know I got the information from him or Powell that the bond was to be sent up there, but I can't recollect; I got it from some of them.

Q. I will ask you what, if anything, do you know about the defendant company being sued by the National Gas Light and Fuel Company.

Counsel for the plaintiff- objects on the ground that the records are the best evidence.

Q. Did you ever see that before (handing witness paper)?

A. Yes, sir.

Q. I will ask you under what circumstances you saw it—where it came from.

A. I sent to Springfield and got it after the summons was served on the company.

Q. Did you ever have any conversation about that suit with Mr. Pratt or Ryan after the service or summons?

A. I don't think that I ever had any conversation with Mr. Ryan about it. I know I didn't have any conversation with him about it. I don't think I have ever seen him since. This conversation, when we were talking about this other matter, if there was any trouble, that they had attorneys employed in Chicago, Mr. West and Bond, to refer the matter to them. I don't recollect seeing Mr. Pratt after this suit was brought.

Q. What do you know, if anything, has been done by the plaintiffs in this suit in regard to defending or the bringing of that suit?

Counsel for the plaintiffs objects on the same ground that the court records is the best evidence.

63 Q. In regard to defending or settling outside of what the record shows?

A. All I can testify about that would be simply what I stated to Mr. Richards and King, the attorneys of Pratt & Ryan, that the

suit should be disposed of. There was nothing ever done that I know of.

Mr. RICHARDS: I move that that answer be stricken out, your honor.

The COURT: Who were the attorneys in the United States court for the plaintiffs, if any one?

A. I don't know who they were.

The COURT: I mean the plaintiffs here.

A. They were not parties to this suit; this was a suit against us.

(By SELLARS:)

Q. To whom were you referred by Pratt & Ryan?

A. West and Bond, and we sent them the writ and they sent us an answer and asked us to sign it, and at the last term of court, I think, it was Mr. Pratt told me that Mr. Raum was the attorney; that the other parties had withdrawn. I spoke of Mr. Richards being the attorney for Mr. Pratt and Mr. Ryan.

Counsel for the plaintiffs asked to have the answer stricken from the record. Motion overruled; to which ruling of the court the counsel for the plaintiffs took exceptions.

Q. Mr. Eads, you may state what else was ever done in regard to this matter that you have not already stated, so far as you know.

A. You mean outside of the record?

Q. Yes, sir.

A. There wasn't anything done, so far as I know.

Q. Do you know whether that suit is still pending?

Counsel for the plaintiffs objects.

The COURT: Well, if he knows.

64 Q. Has that suit been dismissed or not?

Record offered in evidence, marked Defendant's Exhibit "A."

Q. I will ask you, so far as you know, is that suit still pending?

A. Yes, so far as I know, it is still pending. It was there the last that I heard of it, and I have never heard of it being dismissed.

Q. Is there anything else about this matter in controversy that I have failed to ask you, that you know of, that is not stated?

A. Not that I know of. I don't think of anything.

The COURT: Now, as to this fraud, the evidence that I allowed to go to the jury, the evidence to show that it was a matter of fact, stated as a matter of fact.

Mr. DUNDAS: Mr. Ryan, two weeks after the contract was signed, told him that there was a suit pending against these same people. A representation made two weeks before that time, when the contract was signed, two weeks or less, was that these people had abandoned the suit; that there was no suits pending whatever.

The COURT: You claim that was false and known to be false at that time?

Mr. DUNDAS: Yes, sir.

The COURT: What time does the record show that suit was commenced?

WITNESS: In July; the suit that I spoke about was in Indiana.

The COURT: You don't claim this was the one pending?

Mr. SELLARS: No; that was begun since they commenced using the plant.

Mr. DUNDAS: We have shown there was a suit pending by their own admissions by the Springer people, perhaps not two weeks, at the very time this statement was made.

65 Mr. DYAS: Do you claim the suit in Indiana was pending at the time the contract was made?

Mr. DUNDAS: Yes, sir; that you had knowledge that it was pending.

Cross-examination by JOHN T. RICHARDS:

Q. Mr. Eads, you were present at the making of this contract?

A. Yes, sir.

Q. Didn't you at that time make some suggestions as to changes to be made in the drafting of the contract drawn up by Mr. Pratt?

A. I may; I don't remember whether I did or not. Mr. Pratt drew the contract himself.

Q. Was it not at your suggestion that the words "save and keep the said party of the first part harmless" and the words "and if any such suit is brought we will defend the same at our expense" were inserted?

Counsel for the defendants objects as not cross-examination.

The COURT: What official position did you hold in the defendant company at that time?

A. I was their attorney.

The COURT: Well, you may ask him.

Objections overruled; to which ruling of the court the counsel for the defendants then and there duly excepted.

(Reporter read the last question.)

A. I couldn't say whether it was or not. I don't recollect. It may have been.

Q. You referred in your direct examination to a conversation had with Mr. Pratt, in which you said, if I remember it correctly, that he said he had been in the employ of the National Gas Light and Fuel Company and was entirely familiar with the Springer patent?

66 A. I think he said so, or with the Springer people.

Q. Was it not the People's Gas Light and Coke Company that he said he had worked for?

A. He may have said he worked for them. He said he knew all about the Springer patent and had worked in it, or he knew it, or something of that kind.

Q. Isn't it quite possible that he did say that the man Springer had worked some for the People's Gas Light and Coke Company?

A. Well, I don't recollect it that way.

Q. You wouldn't be sure that it was not that way?

A. No; I might be mistaken about that matter, because that was not so important to me. I knew that he gave the impression that he knew what the Springer patent was.

Q. Might it not be possible that what he did say was that he had seen Springer put up an apparatus of that kind for the People's Gas Company and knew all about it?

A. I don't recollect it that way. I wouldn't say positive about it, though.

Q. You have spoken about a conversation with Mr. Charles W. Powell. He lives in Chicago?

A. Yes, sir.

Q. And is one of the directors of the company?

A. Yes, sir; was then and is now.

Recess taken until 1.30 p. m.

67 *Afternoon Session.*

1.30 P. M.

CHARLES POWELL, witness called on behalf of the defendant, being first duly sworn, was examined in chief by H. Van Sellars, and testified as follows:

Q. Mr. Powell, state whether or not you have received any notice from the National Gas and Fuel Company in relation to an instrument you bought from Pratt and Company; state whether you did or not.

A. I did.

Q. Was it verbal or in writing?

A. Verbal.

Q. State what it was.

A. Mr. Houk, or some other representative of the company, I think it was him, he stated that he understood we had bought this patent, this Pratt and Ryan patent, and they said it was their patent that I was using and forbid us to use it, and advised us not to put it up.

Q. What was said by this representative to you about bringing a suit if you went on with it?

A. Yes; he said they would bring a suit against the gas company.

Q. If you used it?

A. If we used it.

Q. What was said in that conversation about it being an infringement upon their patent?

Objected to.

Mr. RICHARDS: Any conversation between Mr. Houk and Mr. Powell can't bind the plaintiffs in this case. Supposing they did

give the gas company notice of that kind, what defence is it
68 to the gas company? It can't be possible that if any person seeking to construct any kind of an apparatus is notified by some other person that that apparatus is an infringement, then that is *that* sufficient warranty for the person for whom the apparatus is constructed to refuse to pay for the apparatus?

The COURT: Suppose they were going to follow it up by showing it was communicated to the company?

Mr. RICHARDS: Suppose it was communicated, is it any defense? Even if it was true, if it was communicated to the defendants in this case it's no defense to this suit.

Mr. SELLARS: We offer to show by Mr. Powell this communication was made to him, and that was communicated to Mr. Eads, and Mr. Eads required Mr. Pratt and Ryan to give them some assurance in the matter or they would throw the instrument back on their hands. That was before it was put in and they agreed to give this bond. These facts are all set up in the plea. They proposed to give this bond and we propose to show that this bond was sent to Mr. Powell and they agreed to give it.

The COURT: They claim in their plea that the plaintiffs represented it was not an infringement.

Mr. RICHARDS: The contract itself contradicts their statement.

The COURT: Yes; but they claim after the contract was made that this was talked of between the plaintiffs and the defendants, and the defendants charged the plaintiffs with having mislead them, and in order to obviate any trouble a new agreement was entered into. That is their theory under that plea. That is what they are trying to do.

69 Mr. SELLARS: Yes; and the plea is understood to be good by the court.

The COURT: Of course, in the absence of any fraud the contract will have to speak for itself. They are claiming under the plea, as I stated before, and it will be for the jury to say, after hearing all the evidence and circumstances in evidence, whether that allegation has been proven, and this they offer tending to prove that plea. Under that state of facts it may be given under that plea and it will be for the jury to say whether they have established it or not.

Objections overruled; to which ruling of the court the counsel for the plaintiffs took exception.

Q. You may state what was said to you by this representative.

A. He said it was an infringement of the Springer patent that they represented.

Q. And what else?

A. And would sue us if we put it in.

Q. I will ask you if you communicated that to the officers here.

A. Yes, sir; I did.

Q. Do you remember when that was—whether the plant was in or not?

A. I think it was in the course of erection. It was the latter part of January or the first of February.

Q. What year?
A. 1889 or 1890.
Q. It was the year the plant was put in, was it?
A. Yes; the year the plant was put in.
Q. Did you ever see that instrument before?
A. I think I have.

70 Q. You may tell where and under what circumstances you received it—when and where you showed it to Pratt and Ryan, or either of them.

A. I seen it awhile after that—probably two or three weeks after I communicated with the officers here what they claimed—and that bond was sent for these gentlemen to execute. It — to me, and I communicated with Mr. Ryan or Pratt either by letter or sent for them to come to my office. They came to my office, anyway.
Q. Then what happened?
A. He looked over the bond and took it under consideration until the next day.
Q. Did he take the bond with him?
A. I think he did; I am not positive about that, but it was my impression he took it with him; he brought it back, I think, the next day. He said the bond was more than they wanted to give. We talked the matter over considerable and I thought it was not enough. He said he would execute a bond for five thousand dollars and no more, and I told him as far as I was concerned I couldn't accept it, but I would communicate the matter to the officers or the secretary of the gas company here.
Q. Did you do that?
A. Yes, sir.
Q. Did you get a reply?
A. I think I got a reply verbally or by letter. I got a reply some way that that was the smallest bond they would accept.
Q. Did you have any further conversations with the plaintiffs?
A. No, sir; I don't think I have ever seen them.

71 Q. I wish you would give as fully as you can the statement made by Mr. Pratt or Ryan—which was it you talked to?

A. Mr. Pratt.
Q. In relation to giving the bond—what did he say about them agreeing to give a bond?
A. I don't know whether he said anything.
Q. I will ask you if in that conversation he denied that he was to give a bond.
A. No; I don't think it was necessary to deny that. He offered to give a bond for five thousand dollars.
Q. He objected to what?
A. To the amount of the bond.
Q. I will ask you now if after that Mr. Pratt ever offered you any bond—five-thousand-dollar bond or a bond to any amount—in regard to this matter.
A. No, sir.

Q. What did he say about giving a five-thousand-dollar bond—you say he objected to this bond?

A. He said he would give a five-thousand-dollar bond.

Q. Did he?

A. Of course not.

Q. Mr. Powell, I will ask you to look at that bond and see the date of it; then I will ask you if you can tell about when you received that—what month it was in, or any nearer than you have told (witness examining bond).

A. Well, it must have been in the month of April some time; I can't tell what date; it's too long ago.

72 Q. It was more than three weeks after you had the conversation?

A. Yes, sir; it was the latter part of January or the first part of February that I had the conversation with Wm. Hauk.

Q. Some time in April you received that bond?

A. Yes, sir; Houk, I think, notified us in the latter part of January or the first part of February. That is as near as I can come to the dates.

Q. I will ask you if in that conversation there was anything said about his having finished the work—putting the plant in.

A. I think not.

Q. Do you know of your own knowledge whether it was in or whether he claimed it was in?

A. When this bond—yes; I think it was about finished, or probably it had been worked some. I got the information some way or other.

Cross-examination by JOHN T. RICHARDS:

Q. Mr. Powell, how many letters did you write to Mr. Pratt—Henry Pratt and Company—about this matter?

A. But one; I don't know whether I ever wrote him a letter.

Q. How did he come in to see you?

A. I say I may have notified him by letter or I may have sent for him; don't know which it was.

Q. I understood you to say that was before the work was completed that you had this conversation with Mr. Pratt?

A. No; it was about the time that it was completed, I think.

Q. Had the gas company been notified at that time by the National Gas Light and Fuel Company of any infringement that they claimed?

A. Not any further than I have already stated, except—I don't know only from hearsay.

73 Q. Do you know whether the National Gas Light and Fuel Company ever wrote a letter to the Paris Gas Light and Coke Company prior to that time?

A. I expect the secretary, who is a witness here, can testify to that, who has done the corresponding. I didn't do anything except notify Mr. Pratt to come and see me. I think that is all the communication I had with him.

Q. Look at this letter and state whether that is in your handwriting (handing witness letter and witness examining same).

A. No, sir; I expect that letter was written by my secretary at my dictation.

Q. That is the one you wrote him?

A. I suppose that is the one he got—a communication.

Q. That will fix the date in which the bond was in your possession, will it not?

A. April 25th; I suppose that will have to fix it. It was about that time I got the bond that I wrote the communication.

Q. Do you remember, Mr. Powell, how long after the writing of this letter Mr. Pratt called to your office with reference to that bond?

A. No; I can't remember. It must have been soon after, judging from the date of the bond here.

Q. Was you there when Mr. Pratt called at the office yourself?

A. I was there; yes; he came in and I offered him the bond or gave him the bond to look over.

Q. Was you in the office when he came there, do you remember?

A. I don't remember whether I was in there or whether I came in afterwards; I was there, at any rate.

Q. You was there when you talked with him?

A. Yes; I seen him at our office frequently; that is the only place I did see him.

Counsel for the defendant offered bond in evidence.

Mr. RICHARDS: Do you offer this in evidence?

Mr. SELLARS: Yes, sir.

Mr. RICHARDS: I think we will object to that. There is no evidence that this bond was exhibited to Mr. Pratt or that he was asked to sign it. I understand he said that he had such a bond.

74 Mr. SELLARS: He said he gave it to Mr. Pratt, and that he probably took it away. I don't know whether he took it away or just looked at it.

Objections overruled; to which ruling of the court the counsel for the plaintiffs then and there duly excepted.

Bond marked Defendant'- Exhibit "B," of which the following is a copy:

Know all men by these presents that we, Henry Pratt and Co., of the county of Cook and State of Illinois, are held and firmly bound unto the Paris Gas Light and Coke Company, of the county of Edgar and State of Illinois, in the penal sum of seven thousand and five hundred dollars; for the payment of which, well and truly to be made, we and each of us bind ourselves, our heirs, executors, and administrators, jointly, severally, and firmly by these presents.

Witness our hands and seals this — day of April, A. D. 1889.

Now, the conditions of this obligation is such that whereas the above-bounden Henry Pratt and Co. have erected and constructed a plant or apparatus for the manufacture of water gas for said Paris Gas Light and Coke Company, at their works in Paris, Illinois, said

plant and apparatus being erected and operated, as claimed by said Henry Pratt and Co., in accordance with patents granted to
75 Pratt and Ryan April 22nd, 1884, and April 12th, 1887, together with any improvements thereon, and said Henry Pratt and Co. are desirous of receiving pay for the same from said gas company; and whereas said Paris Gas Light and Coke Company have been threatened with suits by parties claiming that said apparatus so erected by said Henry Pratt & Co. is an infringement upon their patents: Now, if said Henry Pratt and Co. shall well and truly save and keep harmless said Paris Gas Light and Coke Company against any and all suits which may be brought against it for infringements of other patents, and if any such suit or suits are brought against it shall well and truly, at their own proper cost and expense, defend the same, and in case any judgments shall be rendered again t said gas company on account of such infringements will well and truly pay the same and all costs, attorneys' fees, and expenses appertaining thereto, and in case said gas company shall be enjoined from the use of said apparatus for t making of gas so erected by said Pratt & Co., then they will pay back to said gas Co. the money paid by said Gas Co. to said Henry Pratt and Co., and will generally save and keep harmless said gas Co. from all costs and damages for — on account of the use of said apparatus for making gas so erected for it as aforesaid, then this obligation to be void; otherwise to be and remain in full force and effect.

—— ——. [SEAL.]
—— ——. [SEAL.]
—— ——. [SEAL.]
—— ——. [SEAL.]

76 Mr. Z. E. Powell, a witness called on behalf of the defendant, being first duly sworn, was examined in chief by H. Van Sellars, and testified as follows:

Q. Mr. Powell, you live here at Paris?

A. Yes, sir.

Q. What relation do you sustain to the defendant in this case, or gas company?

A. At the time of this?

Q. Yes; now and then.

A. I am secretary and treasurer of the Paris Gas Light and Coke Company now.

Q. What were you then?

A. I was president and secretary.

Q. And you was manager?

A. Yes, sir.

Q. You may state whether you were present when this written contract — was exhibited here was made.

A. That is, present at the time it was made, while it was being— in the process of being made?

—. ——.

A. Yes; I visited Mr. Pratt and had quite a conversation with him about the matter.

Q. Where?

A. In Chicago, and when he came down here we went to Mr. Eads' office and Robert Parrish was present; in their presence the contract was made.

77 Q. You may state what he said, if anything, about his instrument he was selling to you and the apparatus and your right to use it.

A. Well, we had quite a conversation about it, and at the time the contract was made Mr. Eads was very particular about finding out all he could, their right to use it, &c., and telling him he didn't want the thing if he would have any trouble over it; he didn't want to buy a lawsuit, in other words, and he was assured by Mr. Pratt that he would have a perfect right to use it, and he would sustain him in his patent and see that he wouldn't lose anything by putting it in; he claimed there was no question about it not being an infringement on anybody; that his patent was clear, and assured Mr. Eads.

Q. What was said in that conversation about th*eir* being any other concern that claimed it was an infringement?

A. He said the Springer people had sued them some place in Iowa, and he produced paper purporting to be from there, and we thought, in plain terms, that they had given them the black eye; that's about the way he put it.

Q. What did he say about any other suit or any other place?

A. He didn't say anything about any other suit at that time, but afterwards there was a suit talked about at Goshen, Indiana.

Q. When was it he told you about the suit in Indiana?

A. At the time I got the letter from C. W. Powell, after Houk had been in talking with him.

Q. Well, leave that out. What else was said by Pratt—what statement did he make concerning his familiarity with the Springer patent?

A. He said he was connected with the People's Gas Company, and Mr. Springer had made his experiments at the People's
78 work-, and he claimed that his brother originated that scheme and this was an offshoot from that.

Q. What did he say about the abandonment by these parties; any claim against it?

A. He gave me to understand distinctly——

Objected to.

Q. Just what he said.

A. He said they had no right to jump onto them for an infringement suit, because it wasn't an infringement of their patent or plan.

Q. What did he say about their having abandoned any claim that it was?

A. He said that they had withdrawn the suit in Iowa; that's about all that I remember in that particular.

Q. You may state anything else that was said in that conversation.

A. Well, there was quite a good deal said.

Q. What was said, if anything, by Mr. Eads to him about whether you would purchase it if it was an infringement?

A. Mr. Eads asked him very particular about an infringement on a patent, and he didn't want to buy any lawsuit and he wouldn't do so if there was. I looked to him as the attorney, and I was of the same opinion as he was.

Q. I wish you would explain a little more fully whether Mr. Pratt claimed he saw the experiments made by Springer.

A. Yes; he claimed that he was there at the time Springer made his experiments, and he claimed to know—I had a good deal of confidence in the man then—in his quiet way he induced me to think that he knew what he said——

Objected to.

79 Q. I will ask you now whether you got any word that there was a claim against this patent by the people owning the Springer patent.

A. I received a letter from C. W. Powell, of Chicago, about the first week after they arrived here with their plant to put it in the works, and I took that letter to Mr. Eads at once, and they threatened to sue if we put it in.

Counsel for the plaintiffs objects on the ground that the letter is the best evidence.

Q. Tell any communications you made to Pratt or Ryan, both or either of them, in relation to that communication you got from Charley Powell.

A. After I received the letter I went to Mr. Eads first and then to Ryan there, as advised, and told him that the people up there were threatening suit, and that Mr. Eads wanted the matter stopped until something was done in the matter. He said it was blackmailing and nothing else, and that they would give a bond to the amount of ten thousand dollars to protect us.

Q. Did you and he have any interview with Mr. Eads about it?

A. Afterwards we did. I believe we met on the corner of the square and he said they were willing to give a bond to protect us.

Q. Do you know what was done about the bond?

A. Yes; Mr. Pratt came down here in April, along in April, and he met me and Mr. Eads in the court-house yard, and he agreed if Mr. Eads would make a bond and send it to Chicago that he would execute and return it. Mr. Eads wrote that bond out and I copied it and I sent it to C. W. Powell, to Chicago.

80 Q. See if that is the bond (handing bond to witness).

A. That is the bond, in my handwriting.

Q. I will ask you what, in that conversation, was said about the amount of the bond.

A. Seven thousand and five hundred dollars was agreed right there in the court-house yard. That's the amount that was put in the bond.

Q. When you first received a word from Charlie about that notice

he had got, what was said to Ryan about discontinuing or going on with the apparatus?

The COURT: Who do you mean by Charlie?

Q. I mean after he got the word from Charlie Powell that he had been notified that they would be sued if they used the apparatus, what did you say to Ryan or Pratt or either of them about it?

Counsel for the plaintiffs objects. Objections overruled; to which ruling of the court counsel for the plaintiff- took exceptions.

A. I went to Eads' office, from there to the works, and found Ryan in the works and told him we had received a letter stating we would be sued if he went on with the plant, and Mr. Ryan said they would give us a bond for ten thousand dollars, if necessary, and hooted about the matter of their being any charge at all.

Q. What was said between you and him?

A. Mr. Ryan said they would give us a bond.

Q. What was further agreed on or stated between you and him or Mr. Eads and him about going on or stopping?

A. He wanted to go on, and I referred this matter to Mr. Eads, and they said they would give us a bond, but they never did so. They said they would do that before we need pay them any
81 money. He said it was not necessary for us to pay until we got the bond. He said the money was in our hands.

Q. How long was the work stopped after that notice was given him before they went on again?

A. Well, they had fairly commenced; I don't think they stopped any length of time at all.

Q. Did you come up and see Eads then?

A. No; I seen Mr. Eads afterwards, up on the square. They had a few men there, and they was placing things in.

Q. Who was it did you tell him had notified you that you would be sued if you went on?

A. Who was that?

A. Who was that?

Q. From whom was the threat that you would be sued; there would be trouble if you went on?

A. The letter was written to me by C. W. Powell. He said it was Mr. Houk.

Q. How soon after that did you communicate it to Ryan?

A. Well, the contents of the letter I received from C. W. Powell.

Q. Well, that is what I want you to tell.

A. He said that Houk——

Objected to on the ground that the letter is the best evidence.

The COURT: He has a right to tell what he communicated to Ryan; what was in the letter without producing the letter.

Objections overruled; to which ruling of the court the counsel for the plaintiffs then and there duly excepted.

82 Q. What was it you told Ryan about his complaint up in Chicago?

A. I told him Mr. Houk had threatened to sue the Paris Gas Light and Coke Company.

Q. Is that what you told him?

A. That is what I told him.

Q. Now, I will ask you if they did sue—or do you know about that?

A. Yes; they sued us in the United States court at Springfield. The notice was served on me.

Q. What was said in that conversation of any other conversation that you remember to Mr. Pratt or Mr. Ryan or either of them as to whether they would be allowed to proceed and put the apparatus in if that matter was not arranged some way?

A. I told them unless it was arranged some way that I was ordered to have them stop. He said he would give a bond of any amount.

Q. Was he allowed on that proposition to proceed?

A. Yes, sir; he was allowed to go ahead on that proposition before we were to pay for the plant.

Q. Now, I will ask you if they ever did give a bond.

A. No, sir.

Q. You identify that bond as having been written by yourself?

A. Yes, sir.

Q. I will ask you how the amount of that bond come to be $7,500.

A. Well, that is what Mr. Eads thought was as little as we really ought to take.

Q. What had Mr. Ryan or Pratt to do with the fixing of the amount?

A. Mr. Eads wanted them to give a bond for ten thousand dollars; Mr. Ryan thought that was too much, and they agreed on seven thousand dollars.

83 Q. Was that Pratt or Ryan?

A. Mr. Pratt, this gentleman right here.

By the permission of the court, witness excused to put on expert testimony and plaintiffs' counsel reserving right to cross-examine witness.

FRANK H. HANDLEY, a witness called on behalf of the defendant, being first duly sworn, was examined in chief by H. Van Sellars, and testified as follows:

Q. What is your business—what are you doing at the present time?

A. Working for the gas company.

Q. What were you doing in January, February, March, and April, '89?

A. Working for this company here.

Q. At the gas plant here in this town?

A. Yes, sir.

Q. I will ask what you know, if anything, of an interview between Mr. Powell and Mr. Ryan in relation to going on with the work putting in this apparatus that they put in—Mr. Pratt and

Ryan put in or stopped putting it in—on the account of some notice they had received.

A. I heard Mr. Powell tell him that he would have to stop unless it was adjusted in some way—bond given, satisfactory bond given.

Q. Tell all of the conversation if you can—what reason he gave.

A. He was notified from Chicago, I believe, that they were threatened with a suit.

84 Q. Do you know by whom that suit was?

A. Well, no, sir; I don't know by whom.

Q. What was said in that conversation? I want anything you know about it. I want what was said in that conversation repeated—what he said to Powell and what Powell said to him.

A. Powell said they were threatened with suit by the National Gas and Fuel Company of Chicago, and unless there was a bond given, why, they would have to stop work.

Q. What did Mr. Ryan say?

A. He told him he would give him a bond for any amount—ten thousand dollars, if necessary.

Q. Then what was said?

A. Well, Mr. Powell told him they could proceed.

Q. Anything else that was said in that conversation, if you can remember, you can tell.

(No answer.)

Q. I will ask you if the apparatus was in at that time.

A. No, sir; I think not. Well, I am sure it wasn't completed.

Q. If you remember anything else that was said, you may tell that.

A. Well, I don't know that I do. I don't remember it now if I do.

By the permission of the court, witness excused, and plaintiffs' counsel reserving right to cross-examine witness.

MARTIN DIAL, a witness called on behalf of the defendant, being first duly sworn, was examined in chief by F. W. Dundas, and testified as follows:

85 Q. Where do you live?

A. Terre Haute, Indiana.

Q. What is your occupation?

A. Gas superintendent and engineer.

Q. Of what?

A. Terre Haute Gas Light Company.

Q. How long have you followed that occupation?

A. Twenty-five years—a little over.

Q. How long have you been with the Terre Haute Gas Light Company?

A. A little over twenty years.

Q. Are you familiar with the different processes of gas-making in use today?

A. Well, to some extent.

Q. What apparatus are you using in Terre Haute?

A. I use the United Gas, known as the Improved Lowe.

Q. Is that apparatus covered with the Lowe patent?

A. Yes, sir.

Q. Who are the owners of these patents now?

A. The owners of the patents now are the National Gas Light and Fuel Company of Philadelphia.

Q. Are you familiar with what is known as the Springer patent—the Springer apparatus of making gas?

A. Only at the time that I wanted to introduce water-gas plant at our works.

Q. Are you familiar with the different parts of what is known as the Springer apparatus?

A. I think I could name them.

86 Q. Are you familiar with the defendant's machine here, known as the Pratt and Ryan apparatus?

A. Well, I never examined the Pratt and Ryan except at this place.

Q. You are familiar with this apparatus?

A. Yes, sir.

Q. Do you know how the Pratt and Ryan apparatus, which they have here, differ with the Springer apparatus?

A. Well, yes; I think I do.

Q. I will ask you to look at that cut, the blue print (handing witness paper).

A. That's a section in the elevation of the double shell.

Q. Of what apparatus?

A. Of the Pratt and Ryan.

Q. Look at that for a moment (handing witness paper). I will ask you if that represents the Springer apparatus.

A. That is the Springer cupola or machine.

Q. I think you said you understood the different working parts by the examination you made.

A. Yes, sir.

Q. State to the jury what the difference is between these two different apparatuses.

Mr. RICHARDS: There is no evidence here that there is such a thing as the Springer patent. There is no proof before the court that Springer has obtained any patent. I object.

Counsel for the defendant offered in evidence letters patent No. 10032, issued to Theo. G. Springer on the 23rd day of October, 1887.

87 Counsel for the plaintiffs object on the ground that the court has no jurisdiction of the questions of infringements until the question has been passed upon by the United States court, and that the only evidence competent to prove an infringement is the records of the United States circuit court, finding that there is an infringement.

Objections overruled; to which ruling of the court counsel for the plaintiffs took exceptions.

Counsel for the defendant offered in evidence Springer patent of reissue, marked Defendant'- Exhibit "C."

Counsel for the plaintiffs objects, for the reason that the original patent should first be offered in evidence, and that the instrument shows it to be a reissue.

Objections overruled; to which ruling of the court the counsel for the plaintiffs took exceptions.

Q. I think you told me you understood the working parts of the Springer patent?

A. Yes, sir; that is, the construction of the cupola.

Q. Have you seen it at work?

A. Yes, sir.

Q. And you have examined the apparatus here in Paris in controversy?

Counsel for the plaintiffs objects because it is not covered by the patent introduced in evidence.

The COURT: Well, ask about that.

Q. I will ask you if you are familiar with the Springer method of making water and hydrocarbon gases.

Counsel for the plaintiffs objects because there are twenty-five of thirty Springer patents.

88 Q. I will ask you if you are familiar with the method of making gas by the Springer apparatus covered by this patent.

A. Yes, sir; I have examined it and at that time was about to purchase this plant. I examined this plant here and one or two in Chicago.

Mr. RICHARDS: I object. He has examined plants, but he has examined plants constructed under the Springer patent. Mr. Springer may have gone out here and made some plant that is identical with ours.

Objections overruled; to which ruling of the court the counsel for the plaintiffs then and there duly excepted.

Mr. RICHARDS: I move that that answer be stricken out as not in response to the question.

By agreement of counsel, answer stricken from the record.

(Reporter read last question.)

A. Yes, sir.

Q. I will ask you if you are familiar with the method of making gases by the apparatus here in Paris in controversy.

A. Yes, sir.

Q. What difference, if any, are there in the two processes?

A. The Springer apparatus has a single shell, divided into a generator and a superheater. The generator is filled with hard carbon, hard coal or coke.

Q. Do you mean by the generator the fire-box or a dome above it?

A. Yes; the dome above is generally an arch above the generator, with arch walls or an arch to separate the check-work, which is composed of loose brick, divided up in spaces, from the bot-
89 tom of this arch clear to the top of the machine. The shell we have here is a double shell, two of them brought together. This machine is a double machine, two shells connected together. The object in connecting them together was that in the Springer machine there wasn't depth of fuel enough in the surface to introduce steam at the bottom; there wasn't depth or fuel enough but what it would deaden the fire, so they go to work and bring the two shells together and tie them together. They blow the heat upon both shells at the same time. We turn the heat in by using a fifteen-horse-power engine and they do the same here. They blow the heats up together. They introduce the steam at the top and it goes down through one bed of fuel and crosses over through this connection and goes up through the opposite fuel and up through the check-work, and there the oil is introduced and is carbonized. After doing this work they shut it off. The heats will run down; they will shut off their steam and commence blowing up again, blowing with air, the same as you were going to blow iron. But they reverse the next time and go to the other shell and bring the steam down. They are identical the same, only there are two machines together. You can run the shells together or you can separate them when you want to make repairs, just exactly like the Springer machine at the time I examined it.

Q. This apparatus consist of two shells?

A. Yes, sir.

Q. Connected by a pipe?

A. Yes.

90 Q. If the two Springer shells were connected by a pipe, what would be the difference between them and this apparatus here?

A. There wouldn't be any.

Q. In your judgment, is this an infringement upon the Springer patent?

A. At the time I examined it, this process — also in Chicago. I met Mr. Pratt and I examined the different water apparatuses in the United States before investing our money. I could have bought this machine for one-half the money we paid for the machine we got, but decided we were taking chances and we——

Objected to, and objections sustained; to which ruling of the court the counsel for the defendant then and there duly excepted.

Q. You examined the different processes of making water gases?

A. Yes, sir.

Q. In your judgment, is this apparatus here you have seen in Paris an infringement of the apparatus covered by this patent?

A. Yes.

Cross-examined by DANIEL F. RAUM:

Q. Mr. Dial, have you ever examined the drawing or specifications of the reissued patent number 10032 offered in evidence here today?

—. ——.

Q. Did you examine the claims made in that patent?

A. Well, yes; I just read the claims over; I didn't pay much attention to them.

Q. Do you know what the claims in that patent cover?

A. I just gave my—I just do this: I gave my argument or give my evidence on the examination of the general construction of the Springer apparatus with this single shell, with a generator
91 and a carbonator. As to the examination of the details of these patents, the admissions of the oil and water, and such as that, I haven't done it, but the general construction or foundation of the patent here are composed of a generator and carbonator.

Q. Have you examined the processes claimed by this Springer patent which is offered in evidence?

A. Yes, sir.

Q. You understand the mode of operation?

A. Yes, sir.

Q. Described in this specification?

A. Yes, sir.

Q. You may state what the mode of operation is that is described in this specification, as you understand it.

A. The mode of operation, as I understand it, in the Springer apparatus is this——

Q. I mean in the apparatus described in this specification which is attached to the patent offered in evidence.

A. It's a single shell.

Q. I mean in this patent, so we will not misunderstand each other and take up the time of the court (handing witness paper).

A. The Springer apparatus consist- of a single shell divided. The lower portion of it is called a generator, and the upper portion is called the superheater. In the lower portion you introduce hard carbon or coke, or any other suitable coal, and blow heat with a blower or a fan, and you introduce in this white heat—you introduce the steam and shut off your blower. You blow about ten or fifteen minutes, and you shut off your steam or your air and
92 introduce steam, and the steam comes up and decomposes by passing through this carbon. As it reaches above this hole you introduce your oil for the purpose of carbonizing, and it passes up through these different apparatuses and continues.

Q. That's what you understand by the process?

A. Of the Springer apparatus.

Q. Described in this patent, is it?

A. Yes, sir.

Q. Which claim in this patent offered in evidence do you say has a claim for anything that is used in the apparatus built here at Paris?

A. Why, I should think it was—it is just the joining of the two machines together. You take the Springer single shells and push them together.

Q. Well, will you please examine the claims in that patent and state which one of those claims you think the apparatus made here at Paris infringes (handing witness paper)?

A. I don't know which instrument. There is no difference at all: only the idea of connecting them together. Instead of using common brick at the top, they use a diaphragm above the rod diaphragm.

Q. Do you understand there is anything in Mr. Springer's patent which claims an automatic feeding of the water to make water gas out of?

A. No, sir. As I say now, these devices of getting water and steam and oil, that I haven't paid any attention to. They differ with different men. Take the Lowe patents. Each man that had a license to sell, he built the apparatus to suit himself; he
93 puts in his water or his oil or steam to suit himself. That I haven't followed at all, but the general construction of the machine, compared with this here at Paris or the apparatus used at South Bend or the one used in Terre Haute, are about the same.

Q. How many patents has there been granted to make water gas?

A. Well, I don't know. Water gas has been in use since 1780.

Q. How many different countries has it been used in?

A. Well, it has been used in a great many—in the United States, and England has adopted it and France has had it.

Q. Has there ever been any material difference in the chemical process by which the gas was produced?

A. In the water-gas patent?

Q. Yes, sir.

A. Well, the apparatus——

Q. I mean the chemical process that it is gone through to produce it.

A. No; not where you use ordinary hard carbon, anthracite, or coke to build you- heat up. There may be a mechanical difference at to what kind of material you should use, whether it's naphtha or crude oil, to carbonize the gas. Illuminating——

Objected to.

Q. State what you understand it to be, so the gentlemen will understand it.

A. I can explain it to you. Here is the machine that I use in Terre Haute——

Mr. DUNDAS: That is covered by what patent?

A. That is the Lowe patent. Here you have three different machines.

(RAUM:)

Q. I mean water gas.

94 A. You mean straight water gas?

Q. Yes.

A. There is no material difference that I am aware of in the chemical analysis from the different apparatuses *its* made, if it's made in straight water gas.

Q. You say it has been made for nearly one hundred years?

A. Well, it was suggested in 1780; it has been experimented on ever since.

Q. Now, you may state whether the process of manufacturing illuminating gas by raising to incandescence a mass of carbonacious material by a current of air and producing carbonic oxide, then burning the carbonic oxide by means of air above the bed of carbonacious material and causing the products to pass into a mass of refractory material for highly heating the same, then decomposing water and naphtha by the incandescent carbonaceous material producing water gas, and finally fixing such gas by passing it through the mass of highly heated refractory material—is not that substantially the process followed up and for the manufacturing of illuminating water gas?

A. Yes.

Q. Has not that substantially been the process for a great number of years?

A. Well, yes; of course, they vary a little. Some undertake to make the continual process.

Q. The continual process, that is not much used now?

A. No; that is not the cupola process. Of course, they have a process where they manufacture gas and carbonize it.

95 Q. The process which I have just asked you about is the intermittent process?

A. Yes.

Q. You blow up the fire and stop making gas and blow it up again?

A. Yes, sir.

Q. I will ask you whether the intermittent process hasn't been in use a great many years.

A. Yes, sir.

Q. So the first suggestion was not an early suggestion?

A. The first or the early suggestion of Lowe was in 1875.

Q. Wasn't that a suggestion also of George Lowe, of England, in 1813 or 1814?

A. Yes; they vary; but George Lowe, he carbonized with an external fire; the internal arrangement was discovered about 1875 by Lowe, which had 17 years to run, and that run out the 21st of September, I think, in '92.

Q. Did you ever examine the Siemens patent?

A. For producing gas?

Q. Yes, sir.

Q. I mean Siemens' patent of 1857 and the one of '63 and the one of '64.

A. Well, I couldn't tell you the dates of the patent. We have one at our steel works for making a process known from slack coal.

Q. Do you know how long they have been in use?

A. Well, no; I couldn't answer you that, sir; it has been a great number of years.

Q. I will ask you to read the second claim of this patent offered in evidence (handing witness patent).

96 A. As to heating the superheater?

Q. Well, the whole thing.

A. That's what I understand by it. What's the date of that patent?

Q. That's in '83—well, the original was in '77. That's dated '83, the reissue. Are you familiar with the process mentioned in that claim?

A. Yes, sir; it's about the same.

Q. Principal is about the same as all other processes used in making water gases?

A. Yes, sir.

Q. Now read the third claim; is there any material difference between the apparatus described in that and the apparatus for manufacturing illuminating gases which has been used for many years?

A. Well, no; there isn't for the last six or eight years.

Q. How long has the apparatus such as is described in that claim probably been in use for the manufacturing of illuminating gas?

A. Well, I should say it would cover about the same as Lowe's base patent, blowing heat to heat your refractory material.

Q. It practically covers Lowe's?

A. Yes, sir.

Q. Is there any substantial difference in it?

A. I didn't notice any difference.

Q. I will ask you to read the fourth claim in that patent introduced in evidence and state how long that kind of an apparatus for manufacturing illuminating gas has been in use.

97 A. I have almost the same thing in use now. This air pipe, to supply air at the top for the purpose of burning up the carbon oxide, we have that in use now.

Q. How long has it been in use?

A. I couldn't tell you. I have had it about three and a half years.

Q. How long, as an expert, do you know of that process in that kind of an apparatus having been known to persons that are familiar with the art?

A. I couldn't answer you as to the time.

Q. Do you know whether that is substantially the description of the Lowe apparatus?

A. Yes; that is the improved Lowe; they have that very same identical air pipe.

Q. How does that differ from the old Lowe or original Lowe?

A. Well, you mean the original Lowe?

Q. Yes, sir.

A. Well, it is considerable difference.

Q. How does it differ in operation?

A. Well, the apparatus that I have, it has a separate carbonator where this air is introduced.

Q. What you mean is that the upper part of the Springer apparatus is made in separate vessels below?

A. The Lowe, the improved Lowe, is in two vessels.

Q. I mean the old gooseneck Lowe.

A. It's in two.

98 Q. Is there any material difference between the operation of the old gooseneck Lowe and the operation described in these claims of the Springer patent offered in evidence?

A. Well, of course, the operation of the Lowe gooseneck and carbonator was giving a great deal of trouble, and that point was first commenced under the license of A. A. Granger in raising the carbonator, and he kept on raising it up until he got it up on top. Springer just built it entirely in one shell.

Q. Do you know whether any of the real Lowe apparatus was built in one shell or not?

A. I never saw any built in one shell.

Q. Well, as an expert, with the knowledge of the history of the art, do you know whether any of the early Lowe apparatuses was built entirely in one shell?

A. No, sir; I do not. I never saw any.

Q. State if that is the Lowe patent which you refer to as a gooseneck apparatus.

A. Well, it's about the same as a gooseneck here.

Q. The objection to that was the length of the gooseneck shell which the gas had to pass from the generator the carborator?

A. The objection to it is this: In passing the gas right where you ought to keep it the hottest it commenced to condense, and cools off and stopped up before it got to the carborator.

Q. Is that what you mean by Granger?

A. That is one of the first.

Q. Show to the jury how that was shortened up there (handing witness Plaintiffs' Exhibits "C" and "D"). Look at the

99 drawings and specifications of patent No. 196,495, dated October 23rd, 1877, issued to Theodore G. Springer, for a process and apparatus for manufacturing gas, and state whether, from the examination or from comparison with the drawings of the reissued patent numbered 10032 offered in evidence, there is any material difference between the drawings.

A. That's something I have never seen before at all.

Counsel for the defendant objects. Objections overruled; to which ruling of the court the counsel for the defendant then and there duly excepted.

A. I couldn't answer you on that question.

Q. Will you please read the sixth claim in 10032, which has been offered in evidence, and state whether, in your opinion, an apparatus made as there claimed for and operated as there claimed for would make gas successfully or otherwise?

A. I never made gas that way.

Q. Does anybody else make gas that way, that you know of?
A. I haven't met them on my travels.
Q. Do you think it could be made that way?
A. I couldn't say.
Q. What is your opinion as a gasman?
A. I wouldn't want to say.
Q. If you was going to erect an apparatus to make gas would you undertake to erect an apparatus of that kind or run it in that way with the expectation of getting gas from it?
A. I would if I could get some person to put up a bond to guarantee it to work.
Q. But not otherwise?
A. No.
100 Q. How long have you been familiar with water-gas apparatuses?
A. I have been making water gas four years.
Q. Did you ever have any experience with water gas before that time?
A. No, sir.
Q. Do you know Alexander C. Humphry?
A. Yes, sir.
Q. How is he considered as an authority on water-gas apparatus and production?
A. Well, I should say he was first class.

Objected to as not being cross examination, except for the purpose of testing the competency of the expert.

The COURT: Ask him if he has read the work, and read the work to him and ask whether his opinion conforms to it.

Q. Have you ever read any of the writings of Mr. Humphry upon the subject of water gas?
A. Yes, some; not very much.
Q. Do you use the double Lowe, as they call it?
A. The Humphry setting?
Q. Yes, sir.
A. Yes.
Q. You use that?
A. Yes.
Q. I will ask you to state the mode of operation of the Humphry setting.
A. You can run it single or double; you can run it either way.
Q. Well, run it as called the Humphry setting. I don't understand if you run one generator it's all; I mean running both together.
101 A. The Humphry setting consists of three vessels—a generator, a carbureter, and a superheater.
Q. Well, that is another apparatus; what I mean by the Humphry setting is a double generator.
A. The Humphry setting of the improved Lowe consists of three vessels—the generator, carbureter, and superheater. These are connected together; as to a double setting of them they are connected

together by pipes, so you can use them if you shut the valve down; you can use the machine single or you can blow them up, the same as this Pratt and Ryan do here, and blow them together and make gas by passing steam down through the superheater by carbonating it down the generator—up, down, and out.

Q. That's the principal in which this Pratt and Ryan is put up here in the Paris works, except they have more vessels?

A. Except they have more vessels; that's all.

Q. Do you know what Mr. Humphry states in any writing of his as regard- the identity of the mode of operation of the machine of that kind where you use both generators in the way this apparatus at Paris is used, in comparison with Springer or single-generator apparatus?

A. I don't understand what you mean.

Q. Have you read what Mr. Humphry says as to the identity of the process of making illuminating water gas by using that double generator, such as is used in this apparatus belonging to Pratt and Ryan, at Paris, when compared by Springer or other single apparatuses?

A. Only by reading; it's not advocated very strongly.

Q. After speaking of the Lowe process and the Granger and Collins and the double superheater form, he states, third, "the Chicago or Humphry form. This form of apparatus is very similar in construction to the double superheater form which is described, but there is a difference which brings with it a very different
102 mode of operation." Is that true or not?

A. You are comparing the double setting to the single setting?

Q. Yes.

A. Yes.

Q. It does bring with it a very different method?

A. Yes, sir; on account of clinkering the generators by running steam up and down; we found it almost impossible to run them.

Q. I am talking about the identity of the two processes; whether it's true as stated by Humphry. There is a difference between the two which brings with it a very different method of operation.

A. I don't know as there is any material difference in any of the standard makes of the machines and the Pratt and Ryan; they all accomplish about the same.

Q. You don't agree with Mr. Humphry?

A. No, sir.

Q. Who is Mr. Humphry employed by?

A. By the United States Gas Light and Fuel Company.

Q. They own the National Gas Light and Fuel Company, don't they?

A. Yes, sir.

Q. Have you ever examined the Pratt and Ryan patents?

A. Only what I examined of Mr. Pratt's in Chicago. He told me some things.

Q. You made a thorough examination of the works here that Mr. Pratt put up here?

A. I saw them running.

Q. You know how they were built and the construction and the principal they are operated?

103 A. Yes.

Q. Look at that patent now shown you, issued to Henry Pratt and John J. Ryan, number 361,078, issued April 12th, 1887, and the claims in that patent, and state whether or not that patent substantially describes the claims of the apparatuses set up by Pratt and Ryan for the Paris Gas Company, in Paris.

Objected to as not cross-examination.

Mr. RAUM: He stated that the Pratt and Ryan was an infringement.

The COURT: I am inclined to think you will have to make him your witness.

Mr. RAUM: We wish to show this: He is an expert put on the stand by them, and we have a right, it seems to me, to ask him any question which will test his ability as an expert and see what he knows about this subject. It goes to his credibility.

The COURT: That's true as a general proposition. I am inclined to think you are building up the wrong case now.

Objections sustained; to which ruling of the court the counsel for the plaintiffs took exceptions.

Redirect examination by DUNDAS:

Counsel for the defendant offered in evidence the Lowe patent.

Q. The only thing novel about this Lowe patent is, this superheater is heated internally.

Objected to.

A. I said this: In 1875 Lowe secured that patent, which made the basis of the patent and covered every one of these apparatuses which was carried up to 1889—'84, I think it was—the United States Improvement Gas Company—L——

104 Objected to as not responsive to the question.

Q. I will ask you this: If you know, was any Lowe patent granted upon the sole ground that the only novelty about it was heating the superheater internally instead of externally?

Counsel for the plaintiffs objects. Objections sustained; to which ruling of the court the counsel for the defendant then and there duly excepted *to the ruling of the court.*

Q. Where was the superheater in the Lowe, inside or outside of the shell?

A. The Lowe?

Q. Yes, sir.

A. The superheater of the Lowe?

Objected to.

Q. I mean the late Lowe—the one described in the patent.

A. The superheater is a separate vessel connected with a goose-neck pipe.

Q. Is it outside—where is it located?

A. It's a separate shell by itself.

Q. Not in the shell—the main shell. In the Springer where is the superheater?

A. It's in the main shell.

Q. The Springer is different from the Lowe by having the superheater in the main shell?

A. Yes, sir.

Q. The Springer and the Pratt and Ryan are similar?

A. They are similar. They are in the same shell, consisting of a generator and a carborator.

105 Q. I will ask you if, in your opinion, the Pratt and Ryan apparatus put up here in Paris is an infringement of the Lowe apparatus granted under this Lowe patent which I have introduced.

A. Yes, sir.

Q. Who owns the Lowe or did own it at the beginning of this suit—the Lowe patents?

A. The Lowe patents are owned by the United States Gas Company of Philadelphia; the United States of Philadelphia own the Springer.

Q. The same persons own both?

A. Yes, sir.

Q. Who was Mr. Humphry working for at that time?

A. He works for the United States Improvement Gas Company, at Philadelphia.

Q. What do you say as to the use of two shells being a novelty at the time Pratt and Ryan claimed to have got up their patents—at the time this apparatus——

Objected to.

Q. What can you say as to the use of two shells and two generators as used here at Paris being a novelty in the year 1884—April, 1884?

Objected to as immaterial and not redirect examination.

The COURT: If you want it put as original matter and something that should be in chief I will permit it to go to the jury.

To which ruling of the court the counsel for the plaintiffs then and there duly excepted.

A. I will answer that question by saying, for the two shells and two generators now we don't use, they won't work to satisfaction.

106 Q. I think you said in your former examination-in-chief that the fault of the Springer apparatus was found in its having but one generator or fire-bed; the steam passing through it cooled off too rapidly. I will ask you, if you know, whether or not that was not obviated in the late Springer machines.

Objected to.

Q. Was that obviated by a mechanical change?
A. Yes, sir.
Q. Is that a cut of the Springer machine as covered by these patents?
A. Yes, sir.

Counsel for the plaintiffs objects because it's not the apparatus described in the drawings or specifications introduced in the Springer patents.

Q. I will ask you if, in your opinion, that is the cut of the Springer apparatus as covered by the Springer patents that I have introduced in evidence.
A. Yes, sir; this is the Springer apparatus.
Q. Is that, in your judgment and opinion, the Springer apparatus that is covered and described in the Springer patent which I introduce in evidence? You can look at the patent before you answer.
A. Here is the generator.
Q. I mean of the generator.
A. From what I can see, yes.
Q. What do you call the generator shell?
A. Here; he has got some trap here in feeding; it's entirely different.
Q. Is this a true cut of the generator as covered by this patent?
107 A. It's about the same.
Q. In what respect does it differ from the one covered by that patent?
A. Not much, if any, difference. It's about the same.
Q. Now, you may show the jury by that.

Objected to because the witness does not say it is the same.

A. It's about the same. That apparatus on the side, it was never used, as near as I can see from the generator. It's about the same construction; it's about the same.

The COURT: You mean substantially the same?
A. Substantially; you can perform the same.
Q. You used a great many technical terms. Show the jury from that cut what you mean by a generator.
A. I can explain to the jury what I mean by a generator, generator for water gas. If you want to go in the business, you take an old boiler and cut the flues out of it and set it up on end and line it on the inside with firebrick eight inches or a foot thick and have a division here and arch wall in the bottom, five or six feet from the bottom.
Q. With holes in it?
A. Yes, sir; to support this upper brick-work which we call checker-work. It's common firebrick, with a two-inch space between them; the bottom of it is a generator. In the Springer apparatus we have a side door, and we throw in the hard coal—anthracite—or coke. Right here at the bottom you can see

it, the hard coal or coke. You go to work and blow a heat on this hard coal or coke with a blower, blow a white heat on that
108 coke or coal. You shut off your air. In doing this you generate carbon oxide and heat this for the purpose of fixing a run. You blow up until you get your heat. It takes you ten or fifteen minutes. We only blow seven minutes to get the heat on, and shut our air off and introduce the steam at the bottom and the steam passes through. The hydrogen gas is let up through here and comes in contact with the oil. If you wish to make heating gas, you can let this go through. If you want to make illuminating gas, you carbonize it with oil. By passing it up through this heat you have already restored in here, you fix that gas, and the hydrogen is fixed so they won't separate. They go through here to the works and are purified and is put in the gas works.

Q. That's the manufacture of water gas in the Springer apparatus?

A. Yes, sir.

Q. This exhibit of the Pratt and Ryan apparatus at Paris, do you recognize that as a cut used here at Paris?

A. I have never been inside of their apparatus, but they tell me that's the construction of it.

Q. I will ask you if that illustrates the outside. Here is the outside.

A. These two shells are connected together at the bottom and have—as I have described to you before. Here is the generator and here is your carbon. Instead of using brick he uses a diaphragm or spider arches. Here is his generator; this one is the same. He blows a heat on at the same time, the carbonic oxide passing through here inside of the brick. He goes to the work and lets the steam on and it passes on down through this bed of carbon here, crossing over, and comes up through another bed of carbon.

109 Q. How many beds of carbon does the steam pass through in the Springer?

A. One.

Q. How many in the Pratt and Ryan apparatus here?

A. Two.

Q. That cut illustrates the two shells?

A. Yes, sir.

Q. And right under the cut illustrates the inside?

A. Yes, sir.

Q. The left hand illustrates one side of the shell?

A. Yes, sir.

Q. How does either of these shells differ from the Springer shell?

Objected to as immaterial.

(Question withdrawn.)

Q. I will ask you if you can make gas on the Pratt and Ryan apparatus here by merely using one shell in the same method you have described in making gas by the Springer.

A. Yes, sir; you can put a check between them and check that part and make the same gas.

Q. You can make it by disconnecting it?

A. Yes.

Q. Where do you get your steam, suppose you take one of these shells out and close up that pipe?

A. You put your steam under the bottom.

Q. Where do you get your steam—from the boiler?

A. Yes, sir.

Q. Where does Springer get his?

110 A. From the boiler.

Q. The only difference between one of the shells, the Springer shell, is instead of having brick piled up they use clay arches?

A. Yes, sir; there is a patent on driving the gas down through this.

Q. The patent is on the arches here?

A. Yes, sir.

Q. Driving down and coming here instead of coming up?

A. Yes, sir.

Recross-examination by RAUM:

Q. Mr. Dial, you can't make gas in this apparatus built here at Paris in the same manner that you do in the Springer apparatus unless you make some changes in this?

A. Why, you would have to stop it here.

Q. This pipe connecting the two shells would have to be stopped here?

A. They have that connection in here. I don't know they advocated it. He said any time he wanted to repair one of his shells you could shut down your machine and continue to make gas. I don't know whether he has got a valve in there or not. We have a solid disk we put in, going down one generator and up through. How do you shut this off?

Mr. ZED. POWELL: It's open.

Q. Then, according to this apparatus built here at Paris by Pratt and Ryan, in order to make gas as is made in the Springer apparatus this pipe connecting the two had to be closed?

A. Mr. Powell says they have made it without closing it.

111 Q. Wouldn't you have to change the place where you take steam?

A. Yes, sir; the steam would have to go in the bottom instead of in the top of the fire.

Q. Do you know when it was first proposed that it would be an advantage to use two fires instead of one?

A. Springer claims it. I don't know whether it is so or not.

Q. How long did you use it?

A. We undertook to use it for a month, but it formed a clinker in there so hard you couldn't get it out.

Q. What company?

A. Mr. Judson took me to the works. I couldn't tell you the name of the company.

Q. They have abandoned the use of the Pratt and Ryan process in Chicago now?

A. I don't know anything about it.

Q. Are they using two fires?

A. That I couldn't tell you. The United States Improvement Company put up their machines in that way, but they don't advocate it. We use the Connellsville coke, and it was impossible to run a machine in that way.

Q. Do you know when it was first proposed to use two fires in the way you have described in this apparatus here at Paris instead of one?

A. The first I ever heard of it was from Mr. Pratt.

Q. How long ago was that?

A. Well, I couldn't tell you; eight or ten years. I don't know how long.

112 Q. Will you explain to the jury how these arches are constructed?

A. Well, I understand that they are fireclay, burned.

Q. Do you understand the form of them?

A. Well, I should think that they would have to be round, with holes through them.

Q. You don't know whether there is an arch of this kind that runs up to the center?

A. Well, the drawings don't show it that way. It introduces the oil, and it drips down through it.

Court adjourned until Thursday morning, at 9 o'clock.

PARIS, ILL., COURT-HOUSE,
THURSDAY MORNING, 9 O'CLOCK, *March 17th*, '93.

Z. E. POWELL, recalled, was further examined in chief by F. W. Dundas, and testified as follows:

Q. Mr. Powell, I think you said in your former examination that Mr. Robert Parrish was present at a certain conversation that you told about. I will ask you whether Mr. Parrish is living or dead.

A. He is dead.

Mr. RAUM: Which conversation was that?

Mr. EADS: At the time the contract was made.

Mr. RAUM: At Mr. Eads' office?

113 Mr. DUNDAS: Yes, sir.

Q. Was that letter written by you to the plaintiff- in this suit (handing witness letter)?

A. Yes, sir.

Mr. DUNDAS: I would like to withdraw the witness just now and read a letter; I want to use him further on.

Counsel for the defendant offered in evidence letter marked Defendant'- Exhibit "E" of which the following is a copy:

Paris Gas Light and Coke Company.

PARIS, ILLINOIS, *Feb'y 27th*, 1892.

Henry Pratt & Co., Chicago, Ill.

DEAR SIRS: It has been some time since I last wrote you in reference to the water-gas plant here, and in order to keep you posted I write you about our taking down the blower and engine to make room for getting coal in for the retorts (our men finally made such a kick on this that we took them out). It will do them no injury, but rather the reverse, as we have put them in a cleaner place. We have taken as good care of the property as we could, and if you want to make any suggestions in the care of the property we will give it careful attention, or as much so as we can. It is and has been most fearfully in our way ever since I was instructed to abandon its use, as you know how cramped up we are, and if we should want to put in another bench of retorts we could not do so without moving the cupola; and, as our attorney tells me, *we must*
114 *not use it* under the circumstances. I am afraid we will need the room before it is finally settled.

I am very sorry that this matter got into any such snarl, as it is most certaintly hard on all concerned.

Truly, Z. E. POWELL.

Q. I will ask you if you wrote a letter prior to this letter in regard to this apparatus?

A. Yes; I wrote them another letter.

Mr. DUNDAS: Now, gentlemen, can you produce that letter, the one written prior to this?

Mr. RICHARDS: We have never received any other letter.

Mr. DUNDAS: Will you show me the one written prior to this?

Mr. RAUM: Well, we don't know.

Q. Look at this letter.

A. That is nearly the first letter I wrote them about it. There are several letters.

Q. Are there any letters you wrote them between this one and the one I read?

A. Yes, sir.

Mr. DUNDAS: Have you those letters?

Mr. RAUM: If they were received, they are not here.

Mr. RICHARDS: I had no notice to produce these letters until after we had left Chicago. If there are any—possibly there may be some of the letters mislaid that might have been found with sufficient notice. I understand my friend Dyas was notified last
115 Saturday to produce these letters. We left Chicago Saturday evening and haven't been there since. I first heard of this letter by letter from Mr. Dyas, which was received in Chicago on Monday and returned to Paris to me since I came here. This is the first notice we received. This case has been pending a long time, and it seems to me it is not a reasonable way to ask us to produce such letters. We would produce it if we had it.

The COURT: Where is the notice?

Mr. DYAS: I accepted a verbal notice.

Mr. RAUM: If we had the letter we would give it to you.

Mr. DYAS: There was no agreement as to time. I waived formality of a written notice.

The COURT: Did the notice specify these letters?

Mr. DYAS: No; it specified all letters between certain dates.

Mr. DUNDAS: These two letters are the extreme dates and including certain dates.

The COURT: Do you keep your letters all in the same place in Chicago?

Mr. RICHARDS: All the letters that have been in my possession are kept in certain places. I don't know what Pratt and Ryan received after these came into my hands.

The COURT: Have you, any one, been in the office to look?

Mr. RICHARDS: No, sir; Pratt is the only man in charge. When he is not there the office is closed.

The COURT: What time Saturday did you get this notice?

Mr. DYAS: In the forenoon, wasn't it, Mr. Dundas?

Mr. DUNDAS: Yes, sir.

116 Mr. DYAS: I wrote a letter that went on the noon train. I wrote at once to Mr. Richards of the notice.

The COURT: Did you know that they were going to start down here Saturday?

Mr. RAUM: Mr. Pratt came to Peoria Saturday to see me, and was there Saturday and Sunday.

Mr. RICHARDS: I left home Saturday.

Mr. DUNDAS: I suggested to Mr. Dyas that it was late and that he had better telegraph to be sure. The original trial was set for Tuesday; that was three days' notice.

The COURT: Have you a press copy of these letters?

WITNESS: I have, all but one.

The COURT: How many letters do you want to introduce?

Mr. DUNDAS: Only one.

The COURT: Have you a press copy?

A. I have a copy of the letter dictated to me by Mr. Eads.

Objection overruled; to which ruling of the court the counsel for the plaintiffs took exceptions.

Q. You have no copy of the letter you wrote prior——

Mr. RICHARDS: We admit that the notice was given to Mr. Dyas on last Saturday morning to produce the letters in question.

The COURT: And he accepted it as due notice?

Mr. DYAS: I waived the formality of the notice being in writing.

Mr. RICHARDS: We admit the notice was given to Mr. Dyas at Paris Saturday morning to produce this letter of which they offer to prove the contents.

The COURT: And Mr. Dyas was the attorney at that time for the plaintiffs?

117 Mr. DUNDAS: Yes; the trial of this case was begun on Wednesday morning, March 15th.

Mr. DYAS: The record will show that.

Mr. DUNDAS: The trial began Wednesday morning, but the record shows it Tuesday.

Mr. DYAS: The record will show when the trial took place.

Q. I will ask you if you preserved any copy of the letter to which I refer.

A. I have copies of all the letters but one.

Q. Answer this question. I will ask you if you preserved or have any copy of the letter which preceded the one just read in evidence.

A. No; not the one ordering apparatus taken away.

Q. You may tell the jury in substance the contents of the letter which preceded the one just read in evidence, which you wrote to these plaintiffs.

A. Well, it was stating that the plant was very much in our way, and, under the circumstances, they would have to take it away, and, by the advice of our attorney, I was requested to say to them to remove it. I don't know what I said about damages, but that was the gist of the letter.

Q. Do you remember anything further that was said in the letter?

A. A. Well, I don't know that I do. That was the idea that I wanted to convey.

Q. What's that?

A. That's the idea that I wanted to convey to them to remove the apparatus.

118 Q. Did the letter state why you wanted to remove it?

A. Because it was an infringement and we couldn't use it.

Q. This letter stated that?

A. Well, I don't know; it implied that, of course. Mr. Eads told me not to use the plant, and I thought that was good authority. In that letter I said I did not recognice we had any right to use the plant.

Q. Mr. Powell, you are manager of the gas works?

The COURT: Since this has gone in under exceptions, I want him to show what he did with the letter.

Q. What did you do with the letter?

A. I sent it to Chicago. I addressed it to Henry Platt, 875 South Halstead St., Chicago, Illinois.

Q. How did you send it?

A. By mail.

Q. Did you put a stamp on it?

A. Yes, sir.

Q. Mail it yourself?

A. Yes, sir; I mailed it myself.

Q. Do you know whether there was any return mark on the envelope or not? What kind of an envelope did you use?

A. I don't remember now. I have plain envelopes now and I did for a while then.

Q. What business are you engaged in, Mr. Powell?

A. I am secretary and treasurer of the Paris Gas Light and Coke Company.

Q. Who is the principal manager of this defendant company?

A. I was at that time principal manager. I made the gas myself several months.

119 Q. Who is manager of the company now?

A. Frank Handley.

Q. How long had you been engaged in the gas business?

A. Fifteen years, or near that.

Q. Are you familiar with the methods of making gas?

A. Yes; coal gas and water gas, so far as this plant and the Springer plant are concerned.

Q. You are familiar with the method of making water gas covered by the Springer patent?

A. Ten thousand and thirty-two, I understand, is the one.

Q. Did you examine this plant?

A. Yes, sir.

Q You understand the different steps of the manufacture of water gas by the Springer apparatus covered by this patent?

A. Yes, sir.

Q. Are you familiar with the Lowe apparatus covered by the letters patent to Lowe, introduced in evidence in this case?

A. Only so far as I have looked over the patent and Mr. Dial's plant at Terre Haute.

Q. Do you understand the details of the Lowe patent at Terre Haute?

A. Not thoroughly.

Q. Do you understand the plant set out in the Lowe patent?

A. Yes, sir; some things; especially the superheater.

Q. Do you know whether the making of water gas is new or an old invention?

A. Well, I don't know. I have known it since '88 and '89.

Q. Do you know by general information or by reading the history of it?

A. Yes; I know something about the history of it.

120 Q. Do you know wherein the T. S. C. Lowe apparatus, as covered by these letters patent, differ from the water-gas apparatus that were made prior and in use prior to that time—that is, to the issuing of these letters patent? What is the only point of difference that you know?

A. The only point of difference they have changed it.

Q. I would like to have that answer stricken out as not responsive. Do you know what in the Lowe plant was novel—that is, what was new about it upon which it was granted letters patent over plants that had been used up to that time?

A. I don't know as I can answer that.

Q. Do you know (wherein) the Lowe plant, as covered by these

letters patent, differs from the water-gas plants that were in use before that time?

A. No; I don't know enough about it to tell much about it, because the Lowe plant and Springer plant and Pratt and Ryan are very similar.

Q. How does the Springer plant, as covered by letters patent which we have introduced in evidence, differ from the plant which was put up for your company by these plaintiffs here at Paris?

A. There is some difference in detail. They have the spider arch and a leg that connects the two supolas together and passing the steam down through one fire and up through another.

Q. I want the difference in the plants themselves.

A. One has one cupola; another has two.

Q. How does the cupolas compare with the Springer cupola?

121 A. They are identically the same, with the exception of this checker brick. They are laid crosswise like that, leaving about two inches apart, so that the current of air and gas—the heated coal in the furnaces—when they shut down, in making gas, it allows the gas to go through. It is put in there for the purpose of retaining the gas in the cupola. That's this part here. The fire is not shown here.

Q. Explain to the jury what the spider arches are.

A. This is the Pratt and Ryan. The fire-box is above the grate bars; that's the place for the coal to be thrown in. This represents the spider arch.

Q. What's that spider arch made of?

A. It's made out of fireclay, in blocks. They are arched over and have holes in them.

Q. What shape are they? Does this show them running up or down?

A. They are across in ours. As I understand it, these arches cross.

Q. What is the practical difference between the spider arches and checker brick?

A. The spider arches are not sufficient to retain the heat. There is no difference in the material; you can put checker brick in there.

Q. What other difference is there between the apparatus here—the shells of the apparatus here and the shells of the Springer apparatus referred to—other than what you have stated?

A. Well, the construction of the inside?

Q. Yes, sir.

122 A. They are perforated.

Q. What other difference is there that you have not already explained?

A. None that I know of.

Q. The only difference is one uses spider arches and the other uses checker brick?

A. That's all.

Q. You may describe the process of making gas in the apparatus here as you originally made it.

A. We first build a fire.

Q. By the apparatus here—the Pratt and Ryan?

A. We build a fire in the furnace and start the coal—start the blast—and we throw in coal sufficient to get about three feet of fire in each cupola. After getting it heated hot—the blast is not shown; the blast from our cupola comes in from the rear, up in through the fire in both of them—after getting it sufficient- hot to decompose the steam we blow that fire with a little steam and close the lids. We turn the steam in at the top of the cupola when working, and it passes through and decomposes the steam. It comes up through the stack here and meets the oil injected in here. We put a small st-eam of oil in there for the purpose of carbonizing the gas. I found — was the only one I could use. I told them the fire would go down when the fire cross- here and getting the oil in the second cupola.

Q. Of what practical use are they?

A. Nothing at all; only to get me tangled up in the working.

Q. Does the rule apply there "that one is as good as a thousand"?

A. Yes.

123 Q. What do you know about making gas with one of the shells of this apparatus without using two at all?

Objected to as immaterial and incompetent. Objections overruled; to which ruling of the court the counsel for the plaintiffs then and there took exceptions.

Q. You may state what you know of your own knowledge, if anything, about making gas in one of the two shells of the apparatus put up for the defendant company by the plaintiff here at Paris.

A. Shall I tell you the instruction that Mr. Pratt gave me?

Q. Yes, sir.

A. He told me at any time I wanted to make gas in one cupola to fill the other; if it becomes burnt out, to brick it up and connect the two; it's about sixteen inches in diameter; to fill with fire; brick that up and turn the steam in the bottom of the cupola and work it exactly as the Springer; that it would work the same as the Springer. He told me to do that and fill up the second shell if we wanted to renew the separate shell.

Q. If anything became wrong?

A. Yes, sir.

Q. If you worked the other run how would it differ from the Springer apparatus?

A. It wouldn't differ at all, only in the shape of the material.

Q. I will ask you if you have ever worked one of these shells alone?

A. Yes, sir.

Q. How did it work?

A. It made gas enough for the town.

124 Q. How did it work as compared with the two?

A. Well, I didn't notice any difference at all. I found the

fire was out and I worked on. I found the fire out in one cupola, and I found it was working. That's how I discovered it.

Q. In your opinion, Mr. Powell, is the apparatus here at Paris in controversy an infringement upon the Springer apparatus as covered by letters patent introduced here in evidence?

Counsel for the plaintiffs object because the witness has not shown that he is sufficiently an expert and does not know what the claims of the Springer patent are. Objections sustained; to which ruling of the court the counsel for the defendant then and there duly excepted.

Q. Have you examined letters patent introduced here in evidence, given to Springer?

A. The 10032, I examined that and also a plant built under that.

Q. Do you know what the plans of Mr. Springer are, the novelty of these letters patent?

A. In the single shell and superheater?

Q. Do you know what he claims?

A. I think I know.

Q. I will ask you to look at this for a moment (handing witness letters patent to examine).

A. I understand.

Q. You understand the claim put forth?

A. Yes; I understand that claim in the parenthesis there.

125 Q. You understand the description of the apparatus as set forth in the patent?

A. Yes, sir; I do.

Mr. BAUM: He didn't look at the claims at all.

Q. Beginning at one there, I hereby claim——

A. As I understand that, it's a description of the Springer.

Q. You understand those claims as given in the issue to this patent?

A. Yes, sir.

Q. You understand thoroughly the apparatus put up by the plaintiffs here in Paris, by Pratt and Ryan? I will ask you if, in your opinion, the apparatus put up by the plaintiffs here in Paris is an infringement of the claims of Mr. Springer, as set forth in these letters patent?

Counsel for the plaintiffs object because sufficient foundation has not been made for the witness to testify.

The COURT: Ask him what knowledge he has as a mechanic.

Q. What knowledge or experience have you particularly of the mechanical apparatus for manufacturing water gas?

A. I was with them and assisted them in a good portion of the time to construct this plant.

Q. Outside of this particular plant and outside of the Springer apparatus, what general experience and practical knowledge have

you of mechanical apparatus, and particularly of the mechanical apparatus used for making gas?

A. Well, I have had experience for about 15 years in visiting other points and seeing them make gas.

126 Q. In examining other apparatuses, what experience have you had during these 15 years, particularly of water gas?

A. Whenever I would be at a place where they had water gas, that would be the first place I would go. I would go there to learn something. I found them nearly all Springer plants, with the exception of the plant at Terre Haute.

Q. About how many different water-gas plants have you examined?

A. I examined Mr. Evans' at Jackson, Michigan, and Hyde Park plant, at Chicago, and also one of the People's works, and Goshen, Ind., and Niles, Michigan, and South Bend, Ind., and Mattoon, Ills., and the different coal-gas plants I have not named, but these plants I have examined; Elkhart, also.

Q. Were they manufacturing carburetor water gas?

A. Yes, sir; all with the exception of one, at Jackson, Michigan, and one at Hyde Park, Chicago.

Q. Examining these different apparatuses, did you understand the working details of them after such examination?

A. Yes, sir; I was sufficiently conversant with the water-gas business to tell decomposing steam and *and* carborating with oil wherever they made illuminating water gas.

The COURT: Have you ever made the machinery a study and taken mechanical journals?

A. Oh, yes, sir.

Q. I will ask you what your reading has been—if you have read any of the different writers and pamp-lets of recognized ability about different water-gas apparatus and about the process of making water gas; have you read works of that kind?

127 A. I have nearly everything I could get hold of. You couldn't name any I haven't.

Q. Have you read Mr. Humphrys?

A. Yes; I have read that.

Q. Understood it as you read it?

A. Well, I can't say that I did. I could tell it was decomposing steam.

Q. What other authors' or writers' works have you read in regard to the manufacturing of water gas and regarding different water-gas apparatus?

A. I looked over the encyclopædia to see what they said about making water and steam gas. I don't know as I could tell any authorities.

Q. Who is Henry C. Rue?

A. He is of Chicago. I am not acquainted with him.

Q. Is he recognized as an authority upon water gas?

A. Yes; he is like everybody else—called a water-gas crank.

Q. Have you read any of his writings upon these matters?

A. Yes, sir.

Counsel for the plaintiffs objects. Objection overruled; to which ruling of the court the counsel for the plaintiffs took exceptions.

Q. I will ask you if in your opinion the apparatus put up by the plaintiffs for the defendant here, at Paris, is an infringement upon the claims of Mr. Springer, as set forth in the letters patent granted to Mr. Springer, already introduced in evidence here.

A. I think so, decidedly.

Q. I will ask you to look over the claims of the Lowe patent (handing witness patent letter).

A. I understand that.

128 Q. Have you read the claim here?

A. The first claim?

Q. Read the claims of this letter patent to Lowe. Do you understand the claims of Mr. Lowe as set forth in this letter patent introduced in evidence?

A. Yes, sir.

Q. In your opinion, is the apparatus in controversy here at Paris an infringement of the Lowe patent, as set forth in these claims of the patent issued to him already introduced in evidence?

A. I do.

Mr. RAUM: We make the same objection as to the former question.

The COURT: Without showing himself to be an expert?

Mr. RAUM: Yes, sir; the same ruling, I suppose.

The COURT: Yes, sir.

Mr. RAUM: Well, we will take an exception.

Q. Mr. Powell, what is the value of the apparatus in controversy, regardless of its use as a water-gas apparat-s? In other words, if it could not be used as a water-gas apparatus, what would its value be?

Objected to.

The COURT: Do I understand the plaintiffs in this case to manufacture this apparatus? I would like the record to show that they are the manufacturers of it; it might cut a material part.

(Objections withdrawn.)

Mr. DUNDAS: I will change the form of the question.

(Last question withdrawn.)

Q. If this apparatus could not be used on account of its being an infringement of some other patent, what would its value be, in your judgment?

129 A. Well, if I had use for it, it would be worth more than it would be if I didn't want it.

Q. If this apparatus could not be used for the purpose for which it was delivered here, on account of its being an infringement, what would it fairly be worth?

A. Well, it is valueless to us; it's in our way.

Q. What would it be worth to any one?

A. Well, I suppose it ought to be sold for a thousand dollars.

Q. Is it worth a thousand dollars for something else than its purpose?

A. You would have to have some other use for it.

Q. What is it worth as old iron?

A. I believe we get thirty-five cents a hundred for our old iron.

Q. What, in your judgment, is that apparatus worth as old iron?

Objected to.

(Last question withdrawn.)

Q. To what other use or purpose could this apparatus be applied other than the manufacturing of water gas?

A. They could be used as tanks for water.

Q. To what other purposes could this apparatus be put?

A. Well, the iron, when new, is about twenty-five dollars——

Q. You are not answering my question.

The COURT: What other purpose could this apparatus be put to, leaving out the question of manufacturing gas?

A. Well, I don't know.

Q. You say the tanks could be used for water tanks?

A. Yes, sir.

130 Q. What would they be worth used as water gas, in your judgment, dollars and cents?

A. Well, we gave fifty dollars for one of these tanks.

Q. In your judgment, in dollars and cents, what would they be worth as water tanks?

A. Well, about twenty-five dollars, I expect, or fifty dollars; along there.

Q. To what other purpose than the manufacture of water gas could the rest of this apparatus be put, if you know that?

A. Well, it's hard for me to answer that question.

Q. Do you know of any other purpose to which the rest of the apparatus could be put?

A. No; not with us or any place else.

Mr. RAUM: I move that that answer be stricken out.

Last answer was stricken out; to which ruling of the court counsel for the defendant then and there duly excepted.

Q. To what use or purpose could the rest of this apparatus, aside from the tanks, be put, if you know of any?

A. I don't know of any; some one else might.

Q. What would that apparatus be worth if, on account of it being an infringement, it could not be used to manufacture water gas?

Objected to as having been answered. Objections overruled; to which ruling of the court the counsel for the plaintiffs took exceptions.

A. I understand you to ask what other use it could be put to?

(Reporter read last question.)

131 A. I could put it to no use.

Q. What is it worth if it could not be used for water-gas apparatus?

A. As I said before, old iron, in dollars and cents, twenty-five dollars, forty-five dollars. It's hard to tell what old stuff is worth.

Cross-examination by DANIEL F. RAUM:

Q. When was that letter, which you referred to awhile ago and which we didn't have here, written?

A. I can't give the date, but I have in my mind the time or about the time it was written.

Q. Can you fix the date, anything near? I don't mean the exact date, but approximate it.

A. If you can get at what time Mr. King was here; he said they would sue if we didn't pay, and I wrote Mr. Pratt then.

Q. When was Mr. King here?

A. I couldn't tell now. If you can tell the date Mr. King was here, it was shortly after that.

Q. How long was it before this letter of February 27th was this letter offered in evidence?

Mr. EADS: Yes, sir; that is the letter.

Mr. DUNDAS: Yes; it was read to the jury.

Q. How long before the letter was written, December, '92?

A. Well, I say, it has been some time since I wrote that; probably '90 or '91. I don't know the exact date.

Q. Was it as much as a year prior?

A. I can't tell that, sir.

132 Q. Might it not have been less than six months prior?

A. It may have been.

Q. So you can't fix the time at all, except it was previous to this?

A. Yes; I never heard from him afterwards.

Q. About when was this, the last of the work done by Pratt and Ryan in putting in this apparatus here?

A. The last of February, in '89.

Q. When did the operation of it begin?

A. The 1st of March, '89.

Q. Who operated it at that time?

A. John J. Ryan.

Q. How long did he operate it?

A. He staid there about ten days.

Q. Who operated it afterwards?

A. Frank Handley.

Q. He was in the employ of the gas company?

A. He had been.

Q. Was he then?

A. I think he was.

Q. From that time on it was operated by the gas company?

A. Until the last of March.

Q. How long did the gas company operate it?

A. Well, a little over a year; pretty well on towards two years.
Q. Do you remember the date that they quit using it?
A. The exact date I can't.
Q. Well, within a month.
A. No; I can't. I got knocked out of the box and laid up and they quit using it.
133 Q. Couldn't you tell from the gas company's books when they quit using it?
A. Yes, sir.
Q. Will you look that up when you go off the stand and let us know, so we c-n put that in to the jury; I would like to get that date, if you will be kind enough.
A. It was immediately after Mr. King was here and threatened to sue, and we fixed up to make coal gas.
Q. You can tell by the books?
A. Yes, sir.
Q. When did you first begin to examine into water-gas plants?
A. In '88—1888.
Q. About what time in '88?
A. Early in the spring of '88.
Q. Had you ever give- the matter any attention prior to that?
A. No; I knew something about the chemical changes; was all.
Q. What apparatus did you examine during the year '88?
A. Benjamin's at Brazil made an offer to make fuel gas here by decomposing steam, and I studied then under that experiment.
Q. What apparatus did you visit and examine during the year '88?
A. I was right here at this one and looked over the patents of twenty different ones, I guess.
Q. During that year?
A. Yes; but I didn't know anything about it then.
Q. Did you examine that year the patent offered in evidence here issued to Mr. Springer?
A. No, sir; I only looked at the cut.
134 Q. When did you first read this Springer patent?
A. After I had found out we had got in trouble here?
Q. Did you ever have a printed copy of the drawings or specifications?
A. No, sir; but Benjamin of Brazil did have.
Q. Did you examine them?
A. No, sir; I looked at the cut.
Q. You didn't have the opportunity?
A. No, sir; I was about an hour in his office and he let me look at the cuts. He wouldn't allow me to look over the different specifications at all, and he said if I wanted them to send to Washington for them.
Q. You knew there was such a patent?
A. There was other patents in his office.
Q. What other cuts did you look at?
A. I can't name them; he had the Lowe and the Granger; about twenty.

Q. What plants beside this instrument did you examine during the year '88?

A. I answered this one alone in '88; the apparatus itself.

Q. When did you go and see these other plants which you have spoken of?

A. In '89, I think it was, I went to see some of them.

Q. What plants did you see in '89?

A. In '89, I think it was, that Mr. Pratt I saw at the People's works at Chicago, and I went across to Goshen.

Q. What apparatus did you see in Chicago?

A. I saw the People's works, Pratt and Ryan said it to be, but that gentleman said afterwards it was the Springer; it was the Pratt and Ryan cupola; it was similar.

Q. Did you see any other plants except Pratt and Ryan?

A. In '89; yes, sir; I guess I did; I think I was; I was at Elkhart, Indiana.

Q. What plant is that?

A. The Springer plant.

Q. What time in '89 did you see that?

135 A. That was in January.

Q. Before or after you made the contract?

A. I think it was before.

Q. When did you first examine the claims of this patent offered in evidence of Springer?

A. After we got in trouble, or after Mr. Pratt got his plant in here.

Q. When did you first examine the claims in the patent issued to Lowe which has been offered in evidence?

A. Some of my friends sent it to me by mail. I don't know what year it was—after they found I had purchased the plant.

Q. Did you ever hear of the Lowe patent before?

A. Yes; for fifteen years, or about that, I have heard of it. I have heard of a good many of these different plants.

Q. Did you ever read any account of the Lowe apparatus?

A. I never bothered my mind with it. I have heard of it through talking to different gas manufacturers.

Q. I will ask you to state to the jury what you understand is claimed by Springer in the patent offered in evidence, which was issued to him in his first claim. You may look at the claim. What is claimed as his invention secured by the first claim as patent?

A. By this?

Q. Yes.

A. It was on account of the refractory material to retain the heat for generating the heat. The use of the material is storing the heat to vaporize the oil above the fire.

Q. Do you know whether the refractory material was ever put or used in any other apparatus with the cupola above the fire

136 prior to the issuing of this patent to Mr. Springer, in January 10th, '82?

A. I don't know; it may have been.

Q. Do you know whether it ever had been used or not in that way?

A. We used it down here in this plant—refractory material in the spider arches.

Q. I mean before January 10th, '82.

A. I don't know anything about that; '82 was before I looked after water gas at all.

Q. Now, you may look at the second claim of th-s patent granted to Springer which is in evidence and state what you understand to be the invention claimed in that second claim.

A. Yes; I understand that.

Q. What do you understand the invention which he claims by that?

A. What it says. You have herein described—do you want me to read it?

Q. Yes; if you can.

(Witness reading claim to himself.)

Q. Now, you may look at the second claim of the patent granted to T. S. C. Lowe offered in evidence and examine that claim and state what there is in the second claim of the patent issued to Springer, which was offered in evidence, that is different from the second claim of the Lowe patent.

(Handing witness letters patent.)

A. The result is the same in both.

Q. His claims are practically the same?

A. Practically the same; in fact, nearly all are.

Q. Is there any material difference bet-een these claims?

A. No; I don't see that there is.

137 Q. Now, will you look and compare the first claim of the two patents named and state what the material difference is between what is claimed in these two patents?

A. The first claim?

Q. Yes, sir; the first claim in eac*t* patent.

(Witness reads to himself letters patent.)

A. I don't think there is any material difference.

Q. Isn't it more difference in the language in describing it than anything else?

A. Yes, sir.

Q. There isn't any substantial difference between the two?

A. No.

Q. Now, you may compare the third, fourth, and fifth—the third and fourth claims of the Springer patent with the claims of the Lowe patent and state what material difference there is between them; point it out.

A. I can say this about *the* all the plants that I examined, that there is no material difference in the work, so far as I have seen.

Q. I refer now to the claims in —; that is what I want to get at. There isn't any substantial difference between the claims down to

the fourth claim in the Springer patent and the claims in the Lowe patent?

A. They claimed that to me. They said they paid full consideration for this State and Iowa to use that.

Q. There is no material difference between that?

A. I don't see that there is.

138 Q. Now, you may look at the fourth, fifth, and sixth claims of the Springer patent offered in evidence.

A. There is no sixth and seventh; five and jumps to ten. Oh, yes; here it is over here; it jumps across.

(Witness reading letters patent to himself.)

Q. You may state, as a gasman, whether you think an apparatus built in the way described in that, with an automatic arrangement for feeding water and hydrocarbon in the cupola as claimed, *there* would be practical in making gas.

A. I tell you what I seen; a plant under patent 10032, and it worked nicely——

Q. With automatic arrangement?

A. Well, it was built under this patent, so they tell me.

Q. Did you examine it?

A. Yes; they made gas after they had got it to a sufficient heat.

Q. Did it have an automatic arrangement for doing it?

A. I don't know; they said it was built under this patent.

Q. It's in these three claims for an automatic feeder of water and hydrocarbon oil?

A. The language of that, as I under*d*tand—I saw the plant working.

Q. Does that plan describe the plant you saw?

A. I don't see how it could work, but it did in my presence.

Q. Do you understand that the sixth claim is for an apparatus to have the fire started up whereby the heat may be restored during the daytime for the use in the manufacturing of illuminating gas at night in proportion as such gas is consumed?

139 A. You can close the cupola; it can be closed and stored for two days, and then when you start the plant up it don't take but little while to heat it.

Q. Can you start up your fire—that is, blow your cupola—in the daytime and then start it with an automatic feeding of the steam and oil and let it run automatically at night to make gas in proportion to consumption?

A. You can run it, but they have never done so.

Q. Then these claims for an automatic apparatus in this Springer patent have failed absolutely and they have not carried it out?

A. It don't describe the apparatus that they patent, thoroughly; the wording is not proper.

Q. Then the claims don't cover their apparatus?

A. That's impossible, I think.

Q. In the three last claims?

A. That one claim, automatically.

Q. You have examined the claims in this Lowe patent and know

what the history of water-gas making is. I will ask you to state what there is—what the new thing is—which Lowe claims to have found in his invention secured by this patent offered in evidence.

A. Well, he was about to sue us for using the superheater, or they were, or Springer.

Q. Had the superheater ever been used before?

A. Not that I know of.

Q. What was there about the superheater that he claimed to be his invention?

A. Heating in the same shell, it was nearly the same; it
140 was a gooseneck at first and then they set it over a little closer and Springer set it on top.

Q. How did Lowe heat his superheater?

A. He carried it off to one side.

Q. I would like to have you explain to the jury so they can understand how Lowe heated his superheater.

A. The best description in the world is to read what he says about it there. The plant, if I would describe it, can be shown in the picture so these people can see it at a glance. I will say this: I am not at all competent to tell how the Lowe plant is worked, because I never saw one working. I know how they say they work, but that would be no evidence here.

Q. Do you know how the Lowe superheater is heated?

A. It's heated by passing the air through the coal and then through the checker-work of an outside shell opposite the furnaces.

Q. What is the result of that passing the air in that way?

A. It heats his superheater; it heats it red hot; I don't know whether it would heat it white; I never saw one working.

Q. You understand the chemical changes that go on in blowing up the Lowe apparatus?

A. I do know in decomposing steam or coal—

Q. I mean in blowing up the apparatus.

A. That is, the air it passed up through the coal when it's on fire.

Q. Burning smoke?

A. Yes, sir.

Q. The burning of the smoke in the superheater heats it?
141 A. Yes, sir.

Mr. DUNDAS: You mean by smoke the products of the combustion of the first fire?

Mr. RAUM: Practically smoke.

Mr. DUNDAS: It's the product of the combustion.

Mr. RAUM: Well, smoke is one products.

Mr. DUNDAS: That is one, but there are others.

Mr. RAUM: Yes; and carbonic acid, too.

Q. Did you ever examine the original patent, 196,495, issued to Theodore G. Springer, of which this patent offered in evidence is a reissue?

A. I don't know that I ever saw that.

Q. I will ask to have that marked Plaintiffs' Exhibit "E" for

identification. You may look at that patent now shown you and the claim, and you may compare with it the patent issued to Springer offered in evidence, reissue 10032, and state whether there is any difference between the claims (handing witness letters patent to examine).

A. The description is substantially the same thing, but they have a good deal more to it.

Q. How many claims are there in the original patent?

A. Three.

Q. How many are there in the reissued patent?

A. Seven, it's given here.

Q. Will you compare the three claims of the original patent with the fifth, sixth, and seventh claims of the reissued patent and state whether there is any difference between these claims?

142 A. The third claim of the original?

Q. The third claim of the original with the seventh of the reissue.

A. Six and seven?

Q. No; the first, second, and third with the sixth and seventh in their order.

A. Well, they are substantially the same.

Q. Then the first and second and third and fourth claims of the reissued patent do not occur in the original at all, do they?

A. I don't see that they do, but it describes the plant more fully.

Q. They don't occur in the original patent at all?

A. No; but it describes the plant more fully.

Q. Now, from the descriptive part of the reissued patent number 10032 I will read to you, beginning with the sixty-third line down to the ninety-fourth line; I will ask you to look over the original patent, number 196,495, of the Springer and state whether the matter appears in that original patent at all.

A. It's not there; you don't show me what line it would be on.

Q. I don't know what line it would be there.

A. All the difference I can see that he describes it more fully.

Q. You may look at the reissued patent 10032 and the lines beginning with the sixty-third down to the ninety-fourth and state whether or not that matter included in those lines of the reissued patent occurs at all in the original patent.

A. I can see where it describes in this, not the same wording, but I can see where it describes in this on the same plan that this is reissued; that particular substance is not in it; you take a mechanic and he will understand what it means as a description of this.

Q. It's not contained in the original?

A. It's not in the original, that wording.

Q. Are you familiar with the Pratt and Ryan process?

A. I am familiar with the plant; I have read the patent over; I never made it a study.

Q. You know the construction of this plant put up by Pratt and Company?

A. Yes, sir.

143 Q. I will ask you whether the plant put up here was not substantially in accordance with the description of the apparatus in their patent.

A. I believe it is.

Q. There is one of them and here is the other?

A. The spider arches, they only cross.

Q. That's just slightly a difference in construction?

A. Yes, sir; it's practically the same, this plan—well, it's not quite the same thing, the blue print we have describes it more fully.

Q. It's a correct drawing of your plant?

A. Very nearly so.

Q. Now, so far as you can see, it's substantially in accordance with the description of Pratt and Ryan in their patents?

A. Substantially so.

Q. There is no substantial difference except in a slight mechanical difference?

A. That's all.

Q. What experience have you had in regard to machinery and mechanics, Mr. Powell, other than you have stated?

A. Well, I have a good deal to do with boilers and engines and constructions about coal-mining, principally about gas works. I am a practical printer, learned that from a boy, and a pressman.

Q. Now, in regard to this apparatus that was set up here by the plaintiffs, I will ask you whether there wasn't a tubular boiler in that apparatus.

A. Yes, sir.

Q. The plaintiffs manufactured all of this themselves, brought it down and put it up?

144 A. I don't know whether they did or not; they brought it here.

Q. How large is that boiler?

A. I believe they call it a fifteen-horse-power boiler.

Q. Isn't there an engine in connection with that?

A. Yes, sir.

Q. What sort of an engine is it?

A. An upright engine.

Q. How large is it?

A. I don't know; three or four horse-power engine; about a four horse-power.

Q. What's an engine of that kind worth?

A. I don't believe—about $125.

Q. What's a boiler of that kind worth?

A. Now, you mean—I am talking about new property—I bought a boiler for $350 that was a hundred horse-power. I don't know what that would cost. I never bought a small boiler. That's a small boiler.

Q. Now, the double gas-generators set up, you say they were not used for making gas; what could they be used for?

A. Well, they could be used for water tanks about works.

Q. How large are they?

A. Four feet by twenty-two feet long.

The COURT: What would this machinery weigh?

A. Well, it's two car-loads.

Q. Could these shelves of the generators be used by cutting off the attachments, &c., in any other sort of a gas apparatus?

A. They might, perhaps, but not to my knowledge. Most any man could fit up a gas plant and infringe on some one else—

145 that is, any one that is conversant with machinery.

Q. How thick is that iron?

A. Well, I wouldn't know. It's light boiler iron.

Q. How much do you think that double generator would be worth?

A. Well, they would be worth to us probably fifty dollars.

Q. I don't mean to you. How much would they be worth?

A. It would be hard for me to tell. It's worth old iron.

Q. The two hydraulic seals, what could they be used for?

A. I don't know.

Q. One vaporizor.

A. Well, that consists of one pipe, one pipe outside of another.

Q. Just simply gas pipe?

A. Yes, sir.

Q. How much would these two hydraulic seals be worth?

A. They wouldn't be worth anything to me only as old iron.

Q. One pressure *guage*. Was that in that apparatus?

A. Yes, sir.

Q. What sort of a *guage* was it?

A. There was three. Two of them was brass *guages* and one was tin.

Q. The pressure *guage*?

A. Three pressure *guages*. Two was brass and one was tin. One was for the test-burner—no, it wasn't; there was two brass *guages*.

Q. There was a steam *guage* and a pressure *guage* stated in this contract?

A. There is a difference in *guages*. There is a steam *guage* and a water *guage*, and then there was two water *guages*.

146 Q. Well, this pressure *guage* on the generator, what was that worth?

A. On the generator?

Q. Yes, sir; to determine the pressure of the generator.

A. That was the test-*guage*—burner test, I called it. Why, it wasn't worth anything after it was used awhile.

Q. One test-light purifier can. What was that worth?

A. That's the one that I speak of; that's the burner test. The inside is filled with lime to purify the gas before it's tested.

Q. One full fire front. What's that?

A. I don't know. I have paid as high as thirty and sixty dollars for a boiler front. It was an outrageous price.

Q. What was this one worth?

A. I never bought so small a one.

Q. One set of grate bars.

A. They run from ten dollars up to sixty dollars.
Q. One safety valve.
A. I can get a catalogue and tell you the prices of all of them, but I can't retain them in my mind.
Q. What would that be worth now?
A. Well, to some one that could use it—it wouldn't be worth anything to me.
Q. Could it be used?
A. Yes, sir; or that can be dressed up by a mechanic and made good.
Q. One feed-water injector.
A. That's all right and can be dressed up also and made good.
Q. One combination water *guage*.
A. That's all right with the exception of the glass.
147 Q. Glass over the face of it?
A. Along the side.
Q. One steam *guage*.
A. That's there.
Q. What's it worth?
A. One dollar and a half to five and ten dollars.
Q. One blow-off cock?
A. It's worth fifty or seventy-five cents or a dollar.
Q. One back arch all set up?
A. One back arch; what's that? That at the rear part of the boiler? I don't know what it's worth.
Q. Now, that pr-sure-blower. What's that worth?
A. I don't know what they cost. I can get a catalogue and tell, and the size.
Q. It's a number four.
A. I don't know what they do cost.
Q. Well, is it all right?
A. So far as I know, it's all right.
Q. Could it be used?
A. Yes, sir; I took it out and set it away.
Q. Could it be used?
A. Yes, sir, I say.
Q. One feed oil tank?
A. That is as good as it was the day it was put there.
Q. How large is it?
A. It holds about one hundred gallons, I think.
148 Q. One tubular condenser.
A. That is sta-ding there.
Q. How large is it?
A. Three feet, I think.
Q. Was it used?
A. It was, but I cut it off.
Q. Could it be used?
A. Yes, sir.
Q. What is it worth?
A. I don't know the price of that; I never have bought one.

Q. Is this condenser any part of the water-gas apparatus that these different men claim under their patent?

A. This condenser?

Q. Yes, sir.

A. All condensers are similar in gas with the exception of the atmospheric.

Q. Do they use a condenser in making coal gas?

A. Yes, sir.

Q. Similar?

A. I don't know; I use an atmospheric.

Q. Is such a condenser used in making coal gas?

A. I don't remember of seeing any; there may be such a thing.

Q. How much steam pipe and oil pipe was set up there by the plaintiffs?

A. It's a very compact plant, and there wasn't very much used; there was a good deal more used than was absolutely necessary; quite a good deal.

149 Q. What condition is all that apparatus in?

A. It's in the very best condition we could keep it in. The retort-house and a gasman would have to know something about that to tell what that is.

Q. What condition was it in when you quit using it?

A. It was in good condition.

Q. When you ceased using this apparatus was it in as good condition as ordinary except from the ordinary use it had?

A. Yes, sir; from what I have heard others say, it was in better condition that most of them.

Q. You had taken good care of it while you used it?

A. Yes, sir.

Q. What was the condition of the lining of the generators?

A. They had burnt out some; we had to touch them up some and kept them in good shape.

Q. What was the condition of the arches?

A. The arches was knocked down; I wrote to Mr. Pratt about that; it was so when the oil would go in the oil would leak on the floor.

Q. Was that remedied?

A. It's in that condition yet.

Q. How long did you use it?

A. A little over two months after the first one dropped down.

Q. How long was the other down?

A. Well, it wasn't long—three or four months they were out; that's the reason we used one cupola with one arch down;

150 we used that and the only one for a good while after we first started.

Q. You went on making gas without any arches?

A. Yes; for a while; and we found out we could make gas without it, and we left them out; we only left some of them out—three; we put them in for a while.

Q. You stated in your examination-in-chief that the object of the checker brick-work in the Sprin-er apparatus was to retain the gas?

A. The heat.

Q. And retard so as to fix gas?

A. Fix the gas.

Q. Do you know whether after the oil has been raised to the proper temperature to make it into gas whether it is necessary to continue to pack it in order to fix it?

A. Pack the gas?

Q. Yes.

A. No, sir; it's carried off almost at once; in putting the oil in it the pres-ure vaporizes before it goes in; it's carried in the seals or it will make gas or smut or lamp-black.

Q. The only object in that checker brick-work is to bring the oil to such a temperature as to make gas of it?

A. In the oil all it's put there for is to vaporize it as long as it will decompose.

Q. The oil is put into that brick-work in a vaporized condition?

A. The pres-ure vaporizes it.

Q. When it's raised to a certain temperature it becomes a fixed gas, does it not?

151 A. Yes, sir; it mingles with the hydrogen and in the superheater.

Q. Do you use naphtha or crude oil?

A. We use naphtha part of the time.

Q. Could you make gas of naphtha or coal gas in a retort?

A. Yes, sir.

Q. Suppose in the cupola, such as Springer, instead of putting in the checker brick-work you should put in some small retorts and introduce them with openings, so that the gas could pass up and mix with the water gas, could you introduce your oil into these retorts?

A. And make it a fixed gas, if there is sufficient heat to vaporize the oil, you can.

Q. The small retorts in there would do just as well without the checker brick?

A. They couldn't be held in there so good.

Q. But the retorts would do the work?

A. They could be fixed there; anything to vaporize the oil.

Q. After the oil is brought to the temperature to vaporize it there is no object in bringing it to any more heat?

A. Ye-; to retain the heat in the cupola for the purposes of decomposing the oil.

Q. As to making that particular oil into gas, so soon as it is brought to a heat and vaporizes, that ends it there?

A. It ends it there, but it don't take any time. It must have time to vaporize—eight minutes; you must be able to take the gas off; six or eight minutes. You must heat it alternately.

Q. I don't mean making gas in that way. I mean fixing or making oil into a fixed gas. I will ask you again if, when the

152 oil is brought to a temperature to make a fixed gas, there is any object in continuing to heat that gas up.

A. No; there is no particular object in that, but it's swept—it's swept off as fast as it's made.
Q. If you were not using steam at all it would fix the oil or gas?
A. We draw that off with an exhauster.
Q. It's ready to go off to the purifier?
A. Yes, sir.
Q. It's fixed when it reaches the proper temperature?
A. If there is sufficient material to retain the heat it does a sufficient heat.

Redirect examination by DUNDAS:

Q. What is meant by fixing the chambers?
A. That is the heater.
Q. When the oil is vaporized into what we call pure oil gas and it meets with the hydrogen and carbon oxide, do they instantly come together and form a fixed gas or do they have to be taken off and kept?
A. It's done like the snap of your finger—it's done so quick, and swept off.

(By RAUM:)

Q. Do you know how thick a fire they use in the Springer apparatus?
A. Yes; they use about six feet. It runs from that lower. Between charges they aim to get it six feet.
Q. How deep a fire is used in the Pratt and Ryan?
A. Three feet; about three feet in each. It runs down as it is worked off; it's dropped down.

153 (By DUNDAS:)

Q. Now, Mr. Powell, I will ask you if the vaporized gas in the Springer machine does not meet the water gas right above the fire below the arches.
A. Yes, sir.
Q. Is that instantly turned into carbonated water gas?
A. Yes, sir; or else it is burnt into lamp-black.
Q. Why not take it out here without taking all through this brick-work?
A. It's done so quick.
Q. Isn't it continuously fixed?
A. Yes, sir.
Q. The contact is down here—the contact of the oil with the water gas—and is down here, is it not?
A. Certainly; there is where it vaporizes.
Q. I understand it is vaporized oil?
A. It has got to go through the brick-work.
Q. That takes eight minutes to pack?
A. Oh, no; it goes off in the top from the cupola and in the seal.
Mr. RAUM: That exhausts.

A. No; that pres-ure, it's being fixed as it goes up—it's vaporized—and it will show the pres-ure on the *guage* as soon as it is turned on.

Q. How long since you have used this apparatus?

A. Well, I don't know.

Q. Well, about?

Mr. RAUM: He is to fix that date by referring to his books.

154 Q. I want you to look at the different articles mentioned in that contract and tell me how many of them could be used for any other mechanical purpose than for the purpose of being used in the water-gas apparatus.

A. The little boiler might be used.

Q. What in your opinion was that boiler worth?

A. I don't know; the *guages* might be used and all these valves could be used.

Q. You may t-ll me the purpose, if you can—what parts of that apparatus which the attorney enumerated there could be used for other mechanical purposes than the manufacture of water gas.

A. Well, these cupolas are too little for any boiler; they might be used for a water tank.

Q. Would it do for a lard tank?

A. Well, it might be knoocked to pieces; it might have to be patched all over.

Q. Well, what else there? Look through the items.

A. The grate bars, the condenser. I don't know what other use it *it* could be put to—the oil tank; I don't know what use that could be put to.

The COURT: How did this machinery do the work up to the time you quit using it?

A. When I had a good practical man at work at it, it did very well; all with the exceptions of the arches. If I would use it I would be compelled to put in checker brick to give it material to hold it.

(By RAUM:)

Q. I will ask you whether it isn't true in relation to all water-gas apparatus it depends for success more on the management than anything else.

155 A. Well, you hit me pretty close; I think so.

Q. It depends more on the management than anything else?

A. It depends on the management.

FRANK HANDLEY, recalled, was further examined in chief by F. W. Dundas, and testified as follows:

Q. Give your full name to the reporter.

A. Francis Handley.

Q. What is your occupation?

A. I work for the gas company here.

Q. How long have you been working for the gas company?
A. Well, I worked for them about——
Q. All together?
A. I suppose altogether near seven years.
Q. Have you ever been in the employ of any other gas company?
A. Yes, sir.
Q. What other gas company have you worked for?
A. I worked for the Dallas City Gas Company, Dallas, Tex.
Q. How long?
A. About a year.
Q. What was the nature of your employment?
A. I was foreman of the street department there.
Q. What other company not mentioned?
A. I worked for the Citizens' Gas Company, at Terre Haute.
Q. For how long?
A. Little over two years, I believe.
156 Q. All told, about how long have you been working for the gas companies?
A. Well, I guess about nine or ten years.
Q. During that time has it ever been your duty to make manufactured gas?
A. Yes, sir.
Q. Water or coal gas, or both?
A. Both.
Q. What familiarity, if any, have you with the water-gas apparatus here at Paris put in by these plaintiffs?
A. Well, I operated it for some time.
Q. Do you understand the different elementary parts of it?
A. Yes, sir; I believe so.
Q. Do you understand the process by which it makes water gas?
A. I think so.
Q. Do you understand the process by which the Springer apparatus covered by these patents introduced here makes water gas?
A. Only as I have read over the patents. I never had any experience with it.
Q. You have read over the claims?
A. Yes, sir.
Q. Do you understand any of these claims? Do you understand their meaning and nature?
A. Well, I suppose I do. I hardly know whether I do or not. I never operated one of the machines.
Q. Do you understand what Mr. Springer claims in that patent?
A. Why, I think so; yes.
Q. Do you know whether or not these claims are practically carried out by the Springer apparatus or any of them?
A. No, sir; I do not know.
157 Q. Have you ever examined the Springer apparatus covered by the patents offered in evidence here?
A. No, sir.
Q. Are you familiar with the Lowe apparatus covered by the patent offered in evidence here?

A. I have seen it, but I have never examined it closely.
Q. Do you understand the working parts of it?
A. No, sir; I do not.
Q. You don't understand the difference between it and the apparatus here at Paris?
A. Well, I could make gas on either of them, but still I don't suppose that I could explain it to you.
Q. Do you understand the different parts of the Lowe apparatus covered by the patents introduced here?
A. Yes, sir; I know what the Lowe apparatus consists of.
Q. I mean the particular Lowe apparatus that I offered in evidence; you saw that patent.
A. Yes, sir.
Q. Look at this, please (handing witness Lowe patent).
A. Yes, sir; I have seen it.
Q. Do you understand the parts of the Springer apparatus as illustrated in that cut (handing witness book)?
A. When any one explains it to me I understand it. If one tells another how this works, I could understand it, but to know how it's made I could not. When I read the patent over I understand it; yes, sir.
Q. You have read the Springer patent?
A. Yes, sir.
Q. Which covers this apparatus?
A. Yes, sir.
158 Q. Now, what is the difference between the Springer patent, or the Springer apparatus covered by the patent introduced here, and the apparatus here in Paris?
A. Well, I don't know.
Q. Do you know of any difference between them?
A. Yes, sir; I know of some difference.
Q. Well, what is the difference?
A. Well, as I understand it, the Springer uses checker-work, while — this apparatus they have spider arches.
Q. What is checker-work?
A. It's made of firebrick, or rather called sopes. That's a half brick.
Q. Where is this checker-work situated?
A. You mean in the Springer?
Q. Yes.
A. It's above the fire-box.
Q. Inside or outside of the shell?
A. Inside.
Q. What are the spider arches—the apparatus here?
A. They are a series of arches that goes about the same place that the checker-work does. That one in my machine goes about the same place.
Q. What are the spider arches made of?
A. Made of fireclay.
Q. What is the checker-work made out of?
A. Fireclay.

Q. Is there any other difference between the two that you know of?
A. No, sir; I believe not.
159 Q. You know the three-horse-power engine that is a part of this apparatus?
A. Yes.
Q. About what is it worth or was it worth at the time the defendant ceased to use it?
A. Well, I don't know.
Q. In your judgment.

Mr. RAUM: I object unless the witness states he knows the value of such things.
The COURT: Yes; he should state some knowledge of the value of such property.

Q. Do you know anything about the value of gas engine and gas machinery?
A. Why, yes; I believe I do.
Q. Ever know of them being either bought or sold?
A. Sir?
Q. Ever know about them being either bought or sold?
A. Yes, sir.
Q. Do you know about the value of this gas engine?
A. That is a steam-engine.
Q. Do you know about the value of this steam-engine—four horse-power—that is a part of the apparatus?
A. You mean as it stands now?
Q. As it was at the time the defendant discontinued its use.

Mr. RAUM: I object to the question because the engine was sold to the defendant when it was new.
The COURT: Well, they claim they used it under the con-
160 tract until they found out they couldn't use it.
Objections overruled; to which ruling of the court counsel for the plaintiffs took exceptions.

Q. Do you know proximately what this steam-engine in controversy was at the time the defendant discontinued using it?

Counsel for the plaintiffs make same objections. Objections overruled and exceptions taken.

A. Well, I hardly know. It would be worth more to them if they could use it, but it's owing——
Q. If you knew about what it was worth—would have been worth, if put upon the market—for cash at the time these defendants discontinued its use.

Counsel for the plaintiffs makes same objections. Objections overruled and exceptions taken.

A. Well, I would say $35 or $40.
Q. Do you know what the tubular boiler was worth at the time the defendant discontinued its use, if put upon the market and sold for cash?

Counsel for plaintiff- makes same objections. Objections overruled and exceptions taken.

A. Well, I think it would be worth about seventy-five dollars if a man had to take it out of there.

Q. That engine and boiler that I have referred to, could they be used for other mechanical purposes than the manufacture of water gas?

A. Yes, sir.

Q. What other parts of the apparatus there could be used for other mechanical purposes than the manufacture of water gas?

161 A. The cupolas could be changed into tanks after working them over some.

Q. These cupolas, in your judgment, what would they have been worth in the market for cash at the time the defendant discontinued their use?

A. Well, I expect $150.

Q. What other parts of the apparatus might be used for other mechanical purposes that you know of?

A. Well, I don't know of anything; of course, the firebrick, some of these, I suppose, could be used again; that would be second-hand brick, but I suppose they could be used.

Cross-examination by DANIEL F. RAUM:

Q. Could this condenser be used in coal gas?

A. Yes, sir.

Q. How many water-gas apparatuses have you ever seen in operation?

A. Well, I have seen some seven or eight that I can call to mind just now. I believe I have seen more than that.

Q. How many did you ever work at in making gas?

A. One; water gas.

Q. Did you ever examine the construction of any of the others?

A. Yes, sir.

Q. How many others?

A. Well, in particular, one is all.

Q. Which was that?

A. That J. R. Kendall's process.

Q. Where is an important plant that you examined?

162 A. Well, I have examined two plants; one at Terre Haute, Indiana, and over at Hamilton, Ohio.

Q. When was that process first used?

A. The Kendall?

Q. Yes.

A. It was patented in '92, I believe.

Q. When did you examine it?

A. Why, let's see; November, last year.

Q. Is it true, Mr. Handley, in the apparatus set up here by Pratt and Ryan, it was provided for the use of two fires instead of one?

A. Yes, sir.

Q. Do you know how thick a fire the Springer cupola in use uses?

A. No, sir.

Q. How many fires does the Springer apparatus provide for the use of?

A. I don't know.

Mr. DUNDAS: As covered by the patent introduced here in evidence, how many cupolas does that obtain?

Mr. RAUM: I refer to the cupola you have been speaking of in your examination.

Q. You spoke of having examined the Springer patent, this cut of the Springer cupola, such as is advertised by the Springer people; I will ask you how many fires they use in that apparatus.

A. One, as I understand it—that is, with a single machine.

Q. Do you know how deep a fire it is?

A. No, sir; I do not.

163 Court takes recess until 1.30 p. m.

Afternoon Session.

COURT-HOUSE—1.30 p. m.

Z. E. POWELL, recalled by F. W. Dundas, was further examined in chief as follows:

Q. (Handing witness letters patent.) Mr. Powell, I want you to look at the cut of the Pratt and Ryan apparatus that you hold in your hand there, and particularly that part which illustrates the manner of feeding the oil, the hydrocarbon, and the generator to that apparatus.

A. The apparatus, shown as it is here, in several places.

Q. How many places are shown there?

A. Seven places in this.

Q. How many of them are practically used?

A. I have found in——

Objected to as immaterial.

Mr. DUNDAS: I want to show by the witness that part of the apparatus is perfectly useless.

Mr. RAUM: There is no claim in the patent upon the feeding at all. The patents are not in at all yet. There is a claim upon the construction of these arches; there is a claim of the spider arches connected with the combination by an opening in the arch.

Q. I will ask you, Mr. Powell, how many of the supply pipes or openings for the feeding of the hydrocarbon in the apparatus here at Paris are of any use or value?

164 Objected to as immaterial.

Witness withdrawn.

Mr. RAUM: I wish to ask the witness as to the length of time which they used this apparatas.

A. It was about twenty-two months.
Q. You ascertained that from your books.
A. That is the best record we have. I didn't have the time to look it over thoroughly, but it was about twenty-two months.

Counsel for the defendant offered in evidence the following exhibits, of which the following are copies:

Letter, Marked Defendant's Exhibit "E."

Office of Powell and Lord, general railroad lumber supplies, room 516, No. 218 La Salle street. Railroad cross-ties a specialty.

C. W. Powell. J. B. Lord.

CHICAGO, 4, 25*th*, 1889.

Messrs. Henry Pratt & Co., 875 Halstead street, city.

GENTLEMEN: I have a bond here for your approval. Kindly call and see the same as early as convenient.

Yours very truly, C. W. POWELL.

165 *Transcript from the United States Circuit Court, Marked Defendant's Exhibit A.*

United States Circuit Court, Southern District of Illinois.

THE NATIONAL GAS LIGHT AND FUEL COMPANY
vs.
PARIS GAS LIGHT AND COKE COMPANY and Z. E. POWELL, President. } In Equity.

To the honorable the judge of the circuit court of the United States within and for the southern district of Illinois:

Your orator, The National Gas Light and Fuel Company, duly organized under and by virtue of the laws of the State of Illinois, and having its principal place of business in Chicago, in said State, and within the northern district of Illinois, brings this its bill of complaint against the Paris Gas Light and Coke Company, a corporation duly organized under the laws of the State of Illinois, and having its principal place of business in Paris, in said State, and within the southern district of Illinois, and a citizen, and Z. E. Powell, president of said company.

Whereupon your orator, complaining, says that before the 23rd day of October, 1877, one Theodore G. Springer was the true, first, and original inventor of an "improvement in processes and apparatus for the manufacture of gas," not known or used before his said invention and not in public use or on sale for more than
166 two years prior to the application of the said Springer for letters patent for the said invention, as hereinafter mentioned, either with his consent or allowance or otherwise, as your orator verily believes; and your orator further shows unto your honor

that the said Theodore G. Springer, being, as aforesaid, the first and original inventor of said "improvement in processes and apparatus for the manufacture of gas," did, on the 2nd day of August, 1877, make due application to the Commissioner of Patents for letters patent of the United States for his said invention; whereupon such proceedings were had that on the 23rd day of October, 1877, letters patent of the United States No. 196,495 were duly granted and issued and delivered to the said Theodore G. Springer in the name of the United States of America and under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, whereby there was granted to the said Springer, his heirs and assigns, for the term of seventeen years from the 23rd day of October, 1877, the exclusive right to make, use, and vend to others to be used the said inventions throughout the United States and Territories thereof, as by said letters patent and the specifications and drawings accompanying and made a part of the same, or duly certified copies thereof, ready in court to be produced, will more fully and at large appear.

And your orator further shows unto your honors that the said Theodore G. Springer, having for good and lawful cause surrendered said last-mentioned letters patent No. 196,495 to the Commissioner of Patents, and having made due applications therefor, and
167 having in all things complied with the acts of Congress in such case made and provided, did, on the 7th day of February, 1882, obtained new letters patent numbered 10032 for the same invention for the residue of said term of seventeen years; which said last-mentioned letters patent were issued in due form of law, under the seal of the Patent Office of the United States, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, and bearing date the day and year aforesaid, as by the said last-mentioned letters patent or a duly authenticated copy thereof, in court to be produced, will appear.

Your orator further shows that before the 31st day of January, 1882, one Theodore G. Springer was the true, first, and original inventor of an "improvement in apparatus for manufacturing gas," not known by others before his said invention thereof and not in public use or on sale for more than two years prior to his application for letters patent therefor, with the consent and allowance of the said Springer or otherwise, as your orator believes.

Your orator further shows that the said Springer being the first inventor as aforesaid, on due application therefor, letters patent of the United States for his said invention, in due form of law, were issued and delivered to the said Springer in the name of the United States and under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, dated January 31st, 1882, and numbered 253,120, whereby there was granted to the said Theodore G. Springer, his heirs and assigns, the exclusive right to make, use, and vend to others to be used for the term of seventeen years from the date of said
168 patent said improvement and inventions within, for, and throughout the United States, as by said letters patent or

duly authenticated copies thereof, ready in court to be produced, with more fully and largely appear.

And your orator further shows unto your honors that the said Theodore G. Springer, so being the patentee and sole owner of the aforesaid letters patent of the United States No. 253,120 and reissue No. 10032, did by a good and lawful instrument in writing assign and convey all his rights, title, and interest in and to said two letters patent to your orator, its successors and assigns, which said instrument of assignment is dated the 8th day of April, 1882, and was duly recorded in the transfer book of the United States Patent Office on the 20th day of April, 1882, in Liber K 27, page 442, as by said assignment or a duly authenticated copy thereof, in court to be produced, will more fully appear.

Your orator further shows that before the 25th day of April, 1882, one Theodore G. Springer was the true, first, and original inventor of an "improvement in process of an apparatus for manufacturing gas," not known or used by others before his said invention thereof and not in public use or on sale for more than two years prior to his application for letters patent therefor with the consent and allowance of said Springer or otherwise, as your orator believes.

Your orator further shows that the said Springer being the first inventor as aforesaid, on due application therefor, letters patent
patent of the United States for his said invention, in due
169 form of law, were issued and delivered to the said Theodore G. Springer in the name of the United States and under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, dated April 25th, 1882, and numbered 257,100, whereby there was granted to the said Theodore G. Springer, his heirs and assigns, the exclusive right to make, use, and vend to others to be used for the term of seventeen — within, for, and throughout the United States, as by said letters patent or duly authenticated copies thereof ready, in court to be produced, will more fully and at large appear.

Your orator further shows that before the 20th day of August, 1882, one Theodore G. Springer was the true, first, and original inventor of an "improvement in process of and apparatus for the manufacture of gas," not known or used by others before his said invention thereof and not in public use or on sale for more than two years prior to his application for letters patent therefor with *one* consent and allowance of the said Springer or otherwise, as your orator believes.

Your orator further shows that the said Springer being the first inventor as aforesaid, on due application therefor, letters patent of the United States for his said invention, in due form of law, were issued and delivered to the said Theodore G. Springer in the name of the United States and under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, dated August 29th, 1882, and numbered 263,611, whereby there was granted to the said Theodore G. Springer, his
heirs and assigns, the exclusive right to make, use, and vend
170 to others to be used for the term of seventeen years *for* the

date of said patent said improvements and inventions within, for, and throughout the United States, as by said letters patent or duly authenticated copies thereof, ready in court to be produced, will more fully and at large appear.

Your orator further shows that before the 29th day of August, 1882, one Theodore G. Springer was the true, first, and original inventor of an "improvement in process of and apparatus for the manufacturing of gas," not known or used by others before his said inventions thereof and not in public use or on sale for more than two years prior to his application for letters patent therefor with the consent and allowance of the said Springer or otherwise, as your orator believes.

Your orator further shows that the said Springer being the first inventor as aforesaid, on due application therefor, letters patent of the United States for his said invention, in due form of law, were issued and delivered to the said Theodore G. Springer in the name of the United States and under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, dated August 29th, 1882, and numbered 263,612, whereby there was granted to the said Theodore G. Springer, his heirs and assigns, the exclusive right to make, use, and vend to others to be used for the term of seventeen years from the *said* of said patent said improvements and inventions within, for, and throughout the United States, as by said letters patent or duly authenticated copies thereof, ready in court to be produced, will more fully and at large appear.

171 Your orator further shows that before the 3rd day of May, 1887, one Theodore G. Springer was the true, first, and original inventor of an "improvement in process of and apparatus for manufacturing gas," not known or used by others before his said invention thereof and not in public use or on sale for more than two years prior to his application for letters patent therefor with the consent and allowance of the said Springer or otherwise, as your orator believes.

Your orator further shows that the said Springer being the first inventor as aforesaid, on due application therefor, letters patent of the United States for his said invention, in due form of law, were issued and delivered to the said Theodore G. Springer in the name of the United States and under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, dated May 3rd, 1887, and numbered 362,233, whereby there was granted to the said Theodore G. Springer, his heirs and assigns, the exclusive right to make, use, and vend to others to be used for the term of seventeen years from the date of said patent said improvements and inventions within, for, and throughout the United States, as by said letters patent or duly authenticated copies thereof, ready in court to be produced, will more fully and at large appear.

Your orator further shows that before the 5th day of September, 1882, one Theodore G. Springer was the true, first, and original inventor of an "improvement in process of and apparatus for the

manufacture of gas," not known or used by others before his said invention thereof and not in public use or on sale for more than two years prior to his application for letters patent therefor
172 with the consent and allowance of the said Springer or otherwise, as your orator believes.

Your orator further shows that the said Springer being the first inventor as aforesaid, on due application therefor, letters patent of the United States for his said invention, in due form of law, were issued and delivered to the said Theodore G. Springer in the name of the United States and under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, dated September 5, 1882, and numbered 263,984, whereby there was granted to the said Theodore G. Springer, his heirs and assigns, the exclusive right to make, use, and vend to others to be used for the term of seventeen years from the date of said patents *and* improvements and inventions within, for, and throughout the United States, as by said letters patent or duly authenticated copies thereof, ready in court to be produced, will more fully and at large appear.

And your orator further shows unto your honors that the said Theodore G. Springer, so being the patentee and sole owner of the aforesaid letters patent of the United States Nos. 257,100, 263,611, 263,612, 263,984, and 362,233, did, by good and lawful instruments in writing, assigned and convey all his right, title, and interest in and to said letters patent to your orator, its successors and assigns, which said instruments of assignment were duly recorded in the transfer books of the United States, as by said assignments or duly authenticated copies thereof, in court to be produced, will more fully appear.

And your orator further shows that ever since the said assignments of said letters patent, to wit, Nos. 10032, No. 253,120,
173 No. 259,100, No. 263,611, No. 263,612, No. 263,984, and No. 362,233, your orator has been in full and exclusive possession and enjoyment of said letters patent and the various inventions therein and thereby secured.

And your orator shows that since said assignments of said letters patent it has expended large sums of money in developing and perfecting each of said letters patent and the inventions thereby secured, and with great labor and expense has introduced the several inventions contained in said letters patent to the public, to the great advantage and utility of the public and to the great profit of your orator, and that said inventions in said several letters patent are of great value and utility; that said inventions have all been introduced to the public and practiced by your orator *or* since the issuing of said several letters patent, and that the public have generally acquiesced in the rights of your orator in and to the inventions secured by said several letters patent, and but for the infringement of your orator's rights in the premises by the defendant, as hereinafter stated, your orator would be in the full and exclusive enjoyment of all said letters patent and the inventions therein secured.

And your orator further charges that the inventions described

and claimed in said several letters patent Nos. 10032, 253,120, 257,100, 253,611, 263,612, 263,984, and 362,233, are of such character as to be capable of conjoint as well as separate use in the same apparatus or process of and apparatus for manufacturing gas, and that said inventions have been used in the same process and apparatus, and that the defendant, without the consent of your
174 orator, has used inventions described and claimed in each of said several letters patent in the same process of and apparatus for the manufacture of gas, and that the defendant has also used said invention- separately.

And your orator further shows that the defendants herein had due notice of your orator's rights under all of said letters patents and of the said defendants' infringement of the same, notwithstanding your orator's rights under said letters patent and due notice given to said defendants, and the said defendants have hitherto persisted and still do persist in utterly disregarding your orator's rights and premises, and your orator fears that it will still continue to disregard and infringe upon your orator's rights unless restrained by injunction of this honorable court.

And your orator further charges that, notwithstanding its rights in the premises as aforesaid and notwithstanding the notice to the defendants of your orator's rights under said several letters patent and each of them, the defendants, well knowing the premises, but contriving to injure your orator, and without right and against your orator's consent, and in violation of your orator's rights under said several letters patent and each of them, and in infringement of all the claims contained in each of the said several letters patent, have constructed or caused to be constructed and used and are now using, in and for the manufacture of gas, an apparatus known as the Pratt and Ryan apparatus, constructed by Henry Pratt and Company, of Chicago, Illinois, which said apparatus and the process of manufacturing gas carried on in connection therewith embody and make use of the inventions described and claimed in the said several letters patent Nos. 10032, 253,120, 257,100, 263,611, 263,612, 263,984, and 362,233, and each of them *or* material or substantial parts thereof, and thereby have infringed and still infringe and, as your orator believes, will in the future continue to infringe upon the ex-
175 clusive rights of your orator in said several letters patent and the inventions thereby secured.

And your orator charges that said acts of the said Paris Gas Light and Coke Company and Z. E. Powell, president of said company, are in defiance of your orator's rights acquired by and secured to your orator as aforesaid and are in violation and infringement of the said several letters patent, to the great damage and injury of your orator, by which it has been deprived and is being deprived of great gains and profits which it might — otherwise would have obtained.

And your orator further charges upon information and belief that the said Paris Gas Light and Coke Company and Z. E. Powell, president of said company, will continue in their unlawful use of the

said Pratt and Ryan apparatus, containing the said patented inventions aforesaid, to the great damage of your orator and the loss of the profits which it might and otherwise would receive unless such use be prevented by this honorable court.

And forasmuch as your orator can have no adequate relief except in a court of equity, and to the end, therefore, that the defendants may, if they can, show cause why your orator should not have relief herein prayed, and may, but not upon oath (an answer under oath being hereby waived), and according to their best and utmost knowledge, information, and belief full, true, direct, and perfect answer make in the premises and to all and several the matters hereinbefore charged as fully and particularly as if severally and separately interrogated as to each and every of said matters, and

176 may be compelled to account for and to pay to your orator the sum of fifty thousand dollars ($50,000), as well for the profits accruing to the defendants by reason of their unlawful use of said invention as for damages suffered by your orator from the said unlawful acts of the said defendants.

And your orator prays that the said defendants, The Paris Gas Light and Coke Company and Z. E. Powell, president, and its officers, servants, agents, attorneys, and workmen may be restrained and enjoi-ed by the order and injunction of this honorable court from the further use of the said Pratt and Ryan apparatus, and from directly and indirectly constructing, using, vending, delivering, or working or continuing in works, operations, or use of your orator's said several inventions and improvements patented as aforesaid, and from the said infringement of the said several letters patent Nos. 10032, 253,120, 257,100, 263,611, 263,612, 263,984, and 362,233, and that said defendants may be decreed to pay the costs of this suit, and that your orator may have such other and further relief as shall be equitable in the premises and to your honors shall seem meet.

May it please your honors to grant to your orator a writ of injunction issuing out — under the seal of this honorable court, commanding, enjoining, and restraining the said defendants, Paris Gas Light and Coke Company and Z. E. Powell, president, and its officers, servants, agents, attorneys, and workmen and each and every of them as in hereinbefore prayed, and also may it please your honors to grant unto your orator a preliminary injunction in due form so restraining and enjoining as above prayed the said Paris

177 Gas Light and Coke Company and Z. E. Powell, president, and its officers, servants, agents, attorneys, and workmen pending the trial and determination of this suit.

May it please your honors to grant unto your orator not only a writ of injunction conformable to the prayer of this bill, but also a writ of subpœna, directed to the defendants, Paris Gas Light and Coke Company and Z. E. Powell, president, commanding them at a certain time and under a certain penalty to appear before your honors in this court, then and there to answer this bill of complaint

and abide by and perform such decree as the court shall make in the premises.

And your orator will ever pray, etc.

THE NATIONAL GAS LIGHT AND FUEL CO.,
[SEAL.] By C. D. HAUK, *Sec'y & Gen'l M'g'r.*

JOHN R. BENNETT,
Solc. & of Counsel for Complainant,
38 *Park Row, New York City.*

STATE OF ILLINOIS, } ss:
County of Cook, }

On this 26th day of July, 1889, personally appeared before me C. D. Hauk and made oath that he is secretary and general manager of the above-named complainant corporation; that he has read the foregoing bill by him signed in behalf of the said complainand corporation, and that the same is true to his own knowledge
178 except as to those matters therein stated on information and belief, and as to those matters he believes it to be true.

C. D. HAUK.

Subscribed and sworn to before me this 26th day of July, A. D. 1889.

JOHN M. CAMERON,
[N. *b.* SEAL.] *Notary Public, Cook County, Illinois.*

(Indorsed:) Filed July 29, 1889. James T. Jones, clerk.

UNITED STATES OF AMERICA, } ss:
Southern District of Illinois, }

The United States of America to Paris Gas Light and Coke Company and Z. E. Powell, president, Greeting:

We command you and every of *one* that you appear before our judges of our circuit court of the United States of America for the southern district of Illinois, at Springfield, in said district, on the first Monday in the month of September next, to answer the bill of complaint of the National Gas Light and Fuel Company this day filed in the clerk's office of said court, in said city of Springfield, then and there to receive and abide by such judgment and
179 decree as shall then or thereafter be made, upon pain of judgment being pronounced against you by default.

To the marshal of the southern district of Illinois to execute.

Witness the Hon. Melville W. Fuller, Chief Justice of the Supreme Court of the United States of America, at Springfield aforesaid, this 29th day of July, in the year of our Lord one thousand eight hundred and eighty-nine, and of our Independence the one hundred and 14th year.

[SEAL.] JAMES T. JONES, *Clerk.*

Memorandum.

The above-named defendants are notified that unless they shall enter their appearance in the clerk's office of said court, at Springfield aforesaid, on or before the day to which the above writ is returnable the complainant's bill will be taken against them as confessed and a decree entered accordingly.

JAMES T. JONES, *Clerk.*

I have served the within writ upon the persons therein named in the following manner, to wit: Upon Paris Gas Light and Coke Company by reading to Z. E. Powell, president Paris Gas Light and Coke Company, on the 2nd day of August, A. D. 1889, by personally delivering each of them a copy of the same on the aforesaid days.

C. P. HITCH,
U. S. Marshal,
By HIRAM LYCAN, *Deputy.*

(Indorsed:) Filed August 14, 1889. James T. Jones, clerk.

180 In the Circuit Court of the United States for the Southern District of Illinois.

FRIDAY, *August 30th, A. D.* 1889.

Present: Hon. William J. Allen, district judge.

NATIONAL GAS LIGHT AND FUEL COMPANY
vs.
PARIS GAS LIGHT AND COKE COMPANY *et al.* } In Chancery.

This day come the defendants, by Messrs. West and Bond, their solicitors, and enter their appearance herein.

United States Circuit Court, Southern District of Illinois.

NATIONAL GAS LIGHT AND FUEL COMPANY
vs.
PARIS GAS LIGHT AND COKE COMPANY and Z. E. POWELL, President. } In Equity.

We hereby enter an appearance for the defendants in the above-entitled cause.

WEST AND BOND,
Sol'rs for Defendants.

United States Circuit Court, Southern District of Illinois. In Equity.

The answer of The Paris Gas Light and Coke Company and Z. E. Powell, president, defendants, to the bill of complaint of *complaint of* the National Gas Light and Fuel Company.

These defendants, now and at all times hereafter saving and reserving unto themselves all manner of benefit and advantage of excep-

tion that may be had or taken to the manifold errors and insufficiencies in the said bill contained, for answer thereto or unto so much thereof as they are advised is material or necessary for them to make answer unto, answering, say as follows:

1. That they admit on information and belief that the pretended letters patent of the United States No. 196,495, dated October 23, 1877, for improvements in process and apparatus for the manufacture of gas, were issued to Theodore G. Springer; in like manner
181 they admit that the pretended letters patent of the United States No. 253,120, dated January 31, 1882, for improvement in apparatus for manufacturing gas, were issued to the said Springer; in like manner they admit that the pretended letters patent of the United States No. 257,100, dated April 25, 1882, for improvements in process of an- apparatus for manufacturing gas, were issued to the said Springer; in like manner they admit that the letters patent of the United States No. 263,611, dated August 29, 1882, for improvement in process of and apparatus for the manufacture of gas, were issued to the said Springer; in like manner they admit that the pretended letters patent of the United States No. 263,612, dated August 29, 1882, for improvement in process of and apparatus for the manufacture of gas, were issued to the said Springer; in like manner they admit that the pretended letters patent of the United States No. 263,984, dated September 5, 1882, for improvements in process of and apparatus for the manufacture of gas, were issued to the said Springer; in like manner they admit that the pretended letters patent of the United States No. 362,233, dated May 3, 1887, for improvement in process of and apparatus for manufacturing gas, were issued to the said Springer, but as to whether the applications for the said several patents were duly made and as to whether the said patents were duly and properly issued these defendants have no knowledge except that derived from the bill, and therefore neither admit nor deny the allegations of the bill relative thereto, but leave the compla-nt- to make such proofs relative thereto as it may be advised is necessary; but on information and belief the defendants deny that the said Springer was the true,
182 first, and original inventor of the several improvements described in and claim- by the said several letters patents or either of them.

2. That they admit on information and belief that the said Theodore G. Springer surrendered the said letters patent No. 196,495 and obtained new letters patent, numbered 10032, dated February 7, 1882, but they deny th-t the said patent No. 196,495 was surrended for good and lawful cause, and deny that the said new letters patent No. 10032 are for the same invention as the said original patent No. 196,495.

3. That they aver on information and belief that the said original patent No. 196,495 was not inoperative or invalid by reason of a defective or insufficient specification or for any other error which had arisen by inadvertence, accident, or mistake.

4. That they aver on information and belief that the said reissue patent No. 10032 is not for the same invention as the said original

patent, and that the said reissue has been unlawfully enlarged, and that new matter was introduced into the said reissue patent.

5. That they aver on information and belief that letters patent of the United States No. 234,400, dated November 16, 1880, were issued to A. O. Granger and J. H. Collins, Jr., and the defendants charge that the said reissue was applied for and obtained for the purpose of covering the devices shown and described in the said patent No. 234,400.

6. That they aver on information and belief that the new claims of the said reissue were embodied in the original application for the said patent No. 196,495 and were rejected by the Commissioner of Patents and were by the said Springer erased from the said original application.

183 7. That the said Springer was guilty of laches in allowing more than four years to pass by before attempting to correct any alleged errors or insufficiencies in the said original letters patent by applying for a reissue thereof.

8. That they aver that the said reissue patent contains three separate claims for three different processes, whereof said process claims are void.

9. That they have no knowledge except that derived from the bill relative to the assigning of the said several letters patent of the United States to the complainant, and insist that full proof thereof be made.

10. That th-y have no knowledge except that derived from the bill relative to the exclusive possession and enjoyment of the said several letters patent by the complainant, nor relative to the expenditure of money by the complainant in developing and perfecting each of the said letters patent and the inventions thereby secured and the introduction thereof to the public, nor as to the acquiescence of the public in the alleged rights of the complainant in the said inventions, and insist that full proof be made as to such matters.

11. That they deny on information and belief that the inventions described and claimed in said several letters patent No. 10032, No. 253,120, No. 257,100, No. 263,611, No. 263,612, No. 263,984, and No. 263,233 are of such character as to be capable of conjoint as well as separate use in the same process of and apparatus for manufacturing gas, and that they have been so used in the same process and apparatus, and the defendants deny that they have used

184 the invention described and claimed in each of said letters patent in the same process of and apparatus for the manufacture of gas, and the defendants deny that they have used the said several inventions separately.

12. That they deny that they had notice of the complainant's rights under the said letters patent.

13. That they deny that they have ever constructed or caused to be constructed and used or at the time of the commencement of this suit were or are now using in and for the manufacture of gas any apparatus or process which embodies and makes use of the inventions described and claimed in the said several letters patent or any

of them or any material or substantial part thereof, and deny that they have ever in any manner infringed upon the rights of the complainant under the said several letters patents and the inventions thereby secured or any part thereof. They admit that they have used apparatus for manufacturing gas known as the Pratt and Ryan apparatus, constructed by Henry Pratt and Co., of Chicago, Illinois, but they deny that such apparatus or the process carried on in connection therewith infringes upon the rights of the complainants under any of the said patents, and the defendants aver on information and belief that the apparatus which they have so used was manufactured under and in accordance with certain letters patent of the United States to Henry Pratt and John J. Ryan, who constitute the said firm of Pratt and Co., one of which patents is numbered 297,162, dated and granted April 22, 1884, and the other is numbered 361,078, dated and granted April 12, 1887, and the said process carried on in connection with the said apparatus
185 is the process set forth in the said two last-mentioned patents.

14. That each of the said patents No. 257,100 and No. 263,984 contains more than one process claim. Wherefore the said process claims in each of the said two last-mentioned patents are void.

15. That they aver on information and belief that the said Theodore G. Springer was not the true, first, and original inventor of the several matters and things described in and claimed by the said patent reissue No. 10032, dated February 7, 1882, and that prior to his supposed invention thereof substantially the same thing had been patented by or shown and described in letters patent of the United States, which are also printed publications, as follows:

Letters patent to W. H. Gwynn, dated and granted December 15, 1863, No. 40925.

Letters patent to William Harkness, dated and granted May 26th, 1874, No. 151,283.

Letters patent to M. W. Kidder, dated and granted June 8, 1875, No. 164,093.

Letters patent to H. W. C. Tweddle, dated and granted July 6, 1875, No. 165,189.

Letters patent to T. S. C. Lowe, dated and granted September 21, 1875, No. 167,847.

Also so patented by or shown and described in letters patent to Great Britain, which are also printed publications, as follows:

Letters patent to Frank Clarke Hills, dated and granted January 24, 1852, No. 13912.

Letters patent to John Kirkham and Thomas M. Kirkham, dated and granted August 22, 1884, No. 1882.

186 Letters patent to Frederick J. Arnold, dated and granted February 19, 1884, No. 432.

Letters patent to Frederick William Colls, dated and granted April 28, No. 1533.

16. That they aver on information and belief that the said Springer was not the original and first inventor of the matters and things described in and claimed by the said patent No. 257,100, and

that prior to his supposed invention thereof substantially the said thing had been patented by or shown and described in the said patents hereinabove mentioned, No. 167,847, granted to T. S. C. Lowe September 21, 1875; also in letters patent of the United States to A. O. Granger and J. H. Collins, Jr., No. 234,400, dated and granted November 16, 1880, and letters patent to V. Van Steenburgh, No. 248,070, granted and dated October 11, 1881; all of which patents are also printed publications.

17. That they aver on information and belief that the said Theodore G. Springer was not the true, first, and original inventor of the matters and things described in and claimed by the said patent No. 263,984, dated September 5, 1882, and that prior to his supposed invention thereof substantially the same thing had been shown and described in letters patent of the United States to V. Van Steenburgh, No. 248,070, dated and granted October 11, 1881.

18. That they aver on information and belief that substantially the same thing as that which is described in and claimed by the said patent No. 263,233 was also shown and described in letters patent of the United States granted to the said Theodore G. Springer, dated March 31, 1885, No. 314,739.

187 19. That they aver on information and belief that the several methods or processes of manufacturing gas described in and claimed by the several patents for the alleged infringement of which this suit is brought are each and all of them inoperative.

20. That they aver on infor-ation and belief that each of the patents for the alleged infringement on which this suit is brought is void, or some material part of each is void, for want of patentable novelty.

Without this, that any matter or thing whatsoever in said bill contained material or necessary for these defendants to make answer unto and not herein or hereby well and sufficiently answered unto, confessed and avoided, traversed or denyed, is true to the knowledge and belief of these defendants; all which matters and things these defendants are ready to aver, maintain, and prove as this honorable court shall direct, and humbly pray to be hence dismissed with their reasonable costs and charges in that behalf most wrongfully sustained.

(Signe-) PARIS GAS LIGHT AND COKE COMPANY,
By I. E. PARRISH, *Secretary.*
[SEAL.] Z. E. POWELL, *Pres't.*

WEST AND BOND,
Sol'rs for Def't.

(Indorsed:) Filed September 30, 1889. James T. Jones, clerk.

188 In the Circuit Court of the United States for the Southern District of Illinois.

MONDAY, *April 21st, A. D.* 1890.

Present: Hon. William J. Allen, district judge.

NATIONAL GAS LIGHT AND FUEL COMPANY
vs.
PARIS GAS LIGHT AND COKE COMPANY *et al.* } In Chancery.

This day comes the Paris Gas Light and Coke Company, by Dan. F. Raum, Esq., i-s solicitor, and enters its appearance herein.

UNITED STATES OF AMERICA,
Southern District of Illinois.

In the Circuit Court.

NATIONAL GAS LIGHT AND FUEL COMPANY
vs.
THE PARIS GAS LIGHT AND COKE COMPANY. } In Chancery.

I hereby enter my appearance as solicitor for the defendant in the above-entitled cause.

DAN. F. RAUM,
Solicitor for Defendant.

In the Circuit Court of the United States for the Southern District of Illinois.

MONDAY, *May 26th, A. D.* 1890.

Present: Hon. William J. Allen, district judge.

NATIONAL GAS LIGHT AND FUEL COMPANY *et al.*
vs.
PARIS GAS LIGHT AND COKE COMPANY *et al.* } In Chancery.

189 This day comes Messrs. West and Bond and withdrew their appearance as solicitors for the defendant- in this cause.

United States Circuit Court, Southern District of Illinois. In Equity.

NATIONAL GAS LIGHT AND FUEL COMPANY
vs.
PARIS GAS LIGHT AND COKE CO., Z. E. POWELL, Pres't.

We hereby withdraw our appearance as solicitors for the defendants in the above-entitled cause.

May 23rd, 1890.

WEST AND BOND,
Sol'rs for D'f'ts.

CIRCUIT COURT OF THE UNITED STATES,
Southern District of Illinois, } *ss:*

I, James T. Jones, clerk of the circuit court of the United States in and for the southern district of Illinois, do hereby certify that the

foregoing is a true and complete copy of all the papers, files, and entries of record made in a certain cause wherein The National Gas Light and Fuel Company is complainant and The Paris Gas Light and Coke Company and Z. E. Powell, president, are defendants, as the same appear of file and record in my office.

In witness whereof I hereunto subscribe my name and affix the seal of said court, at Springfield, in said district, this 18th day of March, A. D. 1892.

[SEAL.] JAMES T. JONES, *Clerk.*

190 Defendant here introduced in evidence letters patent No. 10032, hereto attached and marked Defendant's Exhibit "C;" also letters patent No. 167,847, hereto attached and marked Defendant's Exhibit "E;" and defendant here rested its cause.

Plaintiffs in Rebuttal.

And the plaintiffs, to further maintain the issues on their part, introduced the following evidence in rebuttal:

Mr. RAUM: I will now offer in evidence a copy of the subpœna in the chancery case of the National Gas Light and Fuel Company against the Goshen Gas Light Company in the United States circuit court for the district of Indiana.

Paper marked Plaintiffs' Exhibit "I," of which the following is a copy:

U. S. Circuit Court, District of Indiana.

NATIONAL GAS LIGHT AND FUEL COMPANY *vs.* GOSHEN GAS LIGHT COMPANY. } No. 8476. Subpœna in Chancery.

Returnable first Monday of May, 1889.
Filed March 19, 1889.

NOBLE C. BUTLER, *Clerk.*
JOHN R. BENNETT,
Complainants' Solicitor.

191 UNITED STATES OF AMERICA, *District of Indiana.*

The President of the United States of America to the marshal of the district of Indiana, Greeting:

You are hereby commanded to summon Goshen Gas Light Co., citizen of and resident in the State of Indiana, if it be found in your district, to be and appear in the circuit court of the United States for the district of Indiana aforesaid, at Indianapolis, on the first Monday in May next, to answer a certain bill in chancery filed and exhibited in said court against it by the National Gas Light and Fuel Company, citizen of and resident in the State of Illinois. Hereof it is not to fail, under the penalty of the law thence ensuing; and have you then and there this writ.

Witness Honorable Melville W. Fuller, Chief Justice of the Supreme Court of the United States, this 16th day of March, A. D. 1889, and in the one hundred and 13th year of the Independence of the United States of America.

Attest:

[SEAL.] NOBLE C. BUTLER, *Clerk.*

Memorandum.

The said defendant is required to enter its appearance in this suit, in the clerk's office of said court, on or before the first Monday of May, 1889; otherwise the said bill may be taken *pro confesso.*

NOBLE C. BUTLER, *Clerk.*

DISTRICT OF INDIANA:

I received this writ at Indianapolis, in said district, at
192 — o'clock —. m. March 16, 1889, and served the same as follows: By reading same to Wm. A. Thomas, president; Charles W. Miller, secretary, and La Porte Heefner, treasurer, of the Goshen Gas Light Company, and by leaving each of them a copy at their request.

March 19, 1889.

EDWARD HAWKINS,
U. S. Marshal,
By C. H. STEIN, *Dep'y.*

Service and expense, $19.60.

DISTRICT OF INDIANA:

I, Noble C. Butler, clerk of the circuit court of the United States for the district of Indiana, do hereby certify that the above and foregoing is a full, true, and complete copy of the subpœna in chancery in the cause of The National Gas Light and Fuel Company *vs.* The Goshen Gas Light Company, as fully as the same remains on file in my office, in cause No. 8476 in said court.

Witness my hand and seal of said court this 15th day of March, 1893.

[SEAL.] NOBLE C. BUTLER, *Clerk.*

DISTRICT OF INDIANA:

I, John H. Baker, judge of the district court of the United States and *ex officio* judge of the circuit court of the United States for said district, do certify that at the date of the foregoing certificate Noble C. Butler was and now is the clerk of the circuit court of the United States for said district, and that his attestations aforesaid *is*
in due form of law.
193 Witness my hand this 15th day of March, 1893.

JOHN H. BAKER, *Judge.*

UNITED STATES OF AMERICA, } ss:
District of Indiana, }

I, Noble C. Butler, clerk of the circuit court of the United States for the district of Indiana, do hereby certify that John H. Baker, who- genuine signature appears to the foregoing certificate, was at the time of signing the same judge of the district court of the United States for the district of Indiana and *ex officio* judge of the circuit court of the United States for said district, duly commissioned and qualified; that full faith and credit are and of right ought to be given to all his official acts as such in all courts of record and elsewhere.

Witness my hand and seal of said court, at Indianapolis, in said district, this 15th day of March, A. D. 1893.

[SEAL.] NOBLE C. BUTLER, *Clerk.*

To the introduction of which evidence the defendant objects; which objection the court overruled; to which ruling of the court the defendant at the time excepted.

Counsel for the plaintiffs offered in evidence the following letters patent:

Letters patent No. 297,162, issued to Henry Pratt and John J. Ryan, dated April 22nd, 1884, marked Plaintiffs' Exhibit "F."

Letters patent No. 361,078, issued to Henry Pratt and John J. Ryan, dated April 13th, 1887, marked Defendant's Exhibit "C."

194 Letters patent No. 196,495, issued to Theodore G. Springer, dated October 23rd, 1877, marked Plaintiffs' Exhibit "C."

Counsel for the defendant objects to patent No. 196,495. Objections withdrawn.

Letters patent No. 234,400, issued — A. O. Granger and Jno. H. Collins, dated November 16th, 1880.

Objected to as immaterial.

The COURT: I expect you had better put on your expert testimony first.

HENRY PRATT, one of the plaintiffs, recalled and testified in rebuttal as follows:

Q. You are one of the plaintiffs, and already testified in the case?

A. Yes, sir.

Q. You may state whether you heard the testimony of C. W. Powell in relation to the bond which was offered in evidence here.

A. Yes, sir.

Q. Did you examine that bond?

A. No, sir; not until I came here.

Q. Did you examine it here?

A. Not in particular; I just looked at it; I didn't read it.

Q. Did you ever see that paper previous to the time it was offered in evidence here?

A. No, sir.

Q. You may state whether you ever called at Mr. Powell's office in relation to that bond or saw the bond there.

195 A. I called at the office once; I never saw the bond there. Mr. Powell was not in when I called. It was the last time that I called at his office.

Q. Now, you may state whether you received a letter from Mr. Powell in relation to the matter.

A. Yes, sir.

Q. What did you do in pursuance *in* the receipt of that letter?

A. I gave it to Mr. Richards.

Q. Mr. Richards, your attorney?

A. Yes, sir.

Q. Do you know what he did with it?

A. I don't know what he did with it. He told me that he went to see Mr. Powell.

Q. Well, did you ever agree with C. W. Powell to give any bond of indemnity to the defendant?

A. No, sir.

Q. Did you authorize Mr. Richards to make such agreement?

A. I authorized Mr. Richards to give my own individual bond for the amount of money that was due us.

Counsel for the defendant objects unless plaintiff expect to show that Mr. Powell was present.

Q. Now, you may state whether you ever made any arrangment here in Paris to give an indemnifying bond to the defendant.

A. No, sir.

Q. You may state to the jury what conversation took place between you and Mr. Z. E. Powell here in the court-house yard, as you remember it, when you met him here in April, '89.

196 A. I came down here to get a settlement, and when I got down here I saw Mr. Powell and he asked me to go over to Mr. Eads' office with him. We went over there and Mr. Eads wasn't in. In coming back we came through the court-house yard and then met Mr. Eads. I told him what I was after; that I had come down to make a settlement, and he said Mr. C. W. Powell—I can't give the exact words, but the substance was Mr. C. W. Powell was away on business out West; he was the principal owner in the gas company, and they had been notified or had been threatened with suits, and he would probably want a bond, or something to that effect, and as soon as he came back they would see him and see that they would do, and that was the substance of what we talked about when I was here.

Q. What reply did you make in regard to that, if any?

A. Well, I don't remember the exact words, but the fact of ever agreeing to give them a bond I don't remember, but I had agreed to save them harmless from any trouble that they might get into, but I would defend any suits, which was a part of my contract, but I would never ask my friends to go on a bond——

Objected to.

The COURT: Yes; he stated that.

WITNESS: To the best of my recollection, as I stated in the first part. I don't expect to repeat verbatim the words that I had just exactly in a conversation two or three years ago. That is my recollection of it, and I went back to Chicago.

Q. Well, that is all of the conversation, then?

A. Yes.

197 Q. Do you know anything about this talk between Mr. Powell and Mr. Ryan, or Mr. Eads *or* Mr. Ryan, which they testified to?

A. No, sir.

Q. Do you have any recollection in regard to a conversation which Mr. Eads states—Mr. Eads and Mr. Powell both state—that took place between you and them just prior to the making of the contract?

A. On the same day?

Q. Yes; I think it was the same day. If you have, why state it to the jury.

Mr. SELLARS: Mr. Eads' evidence *was* it the day or the day before.

Q. Well, it was the same conversation which Mr. Eads testified to, if you remember it. I came down here to make a contract. I had received a letter from Mr. Powell for me to come down and give them a figure——

Mr. SELLARS: That letter should be in evidence.

Q. I don't care about the letter, but your recollection of the conversation after you got down her- with them in regard to making a contract.

A. They asked me to give them a proposition—to make an agreement in writing, which they was to sign. They asked me if I had a proposition with me in writing. I told them that I had not; that I supposed they would want to dictate something in it.

They said they wanted a gas apparatus, and wanted to know if there had been any trouble in regard to it—any litigation about it. I told them there had been a suit commenced in Iowa against me by the National Gas Light and Fuel Company; that the suit, after pending a long time—my attorney made a motion before the court to have it dismissed for want of prosecution. It was simply to keep me from going into business, as I termed it. When the

198 motion came before the court they consented to have it dismissed, or they wrote——

Mr. SELLARS: Is that what you told them?

A. I think I did in substance.

Mr. SELLARS: We submit this should be limited to what he told Mr. Eads and Mr. Powell.

The COURT: He is trying to tell his version of it.

A. I am trying to tell as near as I can and explain to the court and jury how I explained it to them.

The COURT: Tell it in the language you used. If you can't, tell it in substance.

A. Well, I must tell it in substance, because I can't carry it in my mind that long a time. I told them that the suit had been dismissed and there had been another suit for interference in Washington, in the Patent Office, when I applied for my last patent, Mr. Springer knowing I had put in an application for a patent, after the drawings had been shown him, and he put in an application for a similar patent.

Mr. SELLARS: It is objected to unless he can detail as near as he can what he said before Mr. Eads.

The COURT: He has been instructed by the court to give *her* version as near as he can what he said to the parties, and if he can't, give the substance.

Mr. RAUM: We don't mean to lug in anything that is not proper.

WITNESS: I am trying to explain as I would if I was selling you gentlemen the apparatus.

The COURT: Tell what transpired between them.

199 WITNESS: I told them that the interference suit in Washington had been heard before the primary examiner, and they took an appeal from this primary examiner to the board of examiners-in-chief. They sustained the primary — in his decision, and it was appealed then to the Commissioner of Patents. The Commissioner of Patents sustsined and granted Mr. Ryan and myself the patent. I told them this was the history of that invention. They was threatening us and our customers to keep us out of business, but I believed we had a good and valid patent and no infringement upon any other person's parent. In writing the contract I told them we would defend any suits which might be brought against them, and I didn't know of any suits at that time pending. As Mr. Eads was a lawyer, I thought at the time he told them——

Objected to.

The COURT: Not what you thought, but just what occurred.

WITNESS: Well, I wanted to say that I told them positively for Mr. Eads to writ- it, and I intimated as much——

Objected to.

The COURT: No; just what occurred.

WITNESS: I told them if they wished I would sit down and write an agreement or proposition to put in their works and then we could copy it off and make such alternations, if any, as they saw fit. I sat down and wrote the original proposition, which is just as it is. After I wrote it and it was read, I read until it came to where I had used, perhaps, a term that wasn't just right in a legal way, but I would render the company harmless; I think that is the way I put it. I crossed that out with a pen and put in at the suggestion of Mr. Eads that "we would save and keep."

200 The COURT: Did that occur in the presence of Mr. Eads?

WITNESS: Yes, sir.

The COURT: He was cognizant of what was going on?

WITNESS: Yes, sir.

Q. Was there any alteration made in the contract as you wrote it at the suggestion of Mr. Eads?

A. I interlined there at his suggestion.

Q. What was that line?

A. "If any such suits are brought, we will defend the same at our own expense."

Q. When was the contract executed in relation to that conversation?

A. January the 8th.

Q. Well, in relation to that conversation, when was it; how long after the conversation was it before the contract was executed?

A. It was perhaps five or ten minutes after we had got through.

Q. What is your business at the present time, Mr. Pratt?

A. I am secretary and treasurer of the Tobin & Hamler Manufacturing Company. They manufacture engines, boilers, and machinery; most everything that is made out of iron and steel.

Q. How long have you been connected with that company?

A. It will be three years in June.

Q. What is the nature of your duties in connection with that company?

A. It is to attend the meetings of the board, and also superintend whatever work there is in the shop, and to make estimates and propositions for work, contracts, &c.

Q. What business did you follow prior to that, to the time you went into that?

201 A. Immediately before I was erecting water-gas apparatus.

Q. How long did you give your attention to that?

A. On my own account?

Q. Yes.

A. I think it was about two years, or near that.

Q. Now, prior to that, what were you engaged in?

A. I was engineer and superintendent of the People's gas works, Chicago.

Q. How long were you employed there?

A. I was employed there nearly seventeen years.

Q. What were your duties while you were employed there?

A. To make drawings of the different plants of the gas works that was required by the company and to superintend the manufacture of gas.

Q. And the construction of the works?

A. The construction of any part of the works which was going on, all parts.

Q. What kind of gas did they made when you first went there?

A. Coal gas.

Q. Have you more than one system?

A. They hadn't when I went there.

Q. How long after you first went or about what year was it they began to use water gas, if at all?

A. They first commenced to make oil gas; it was substantially

with the oil gas; we made water gas at different times in different ways, but it was about '82, if my recollection serves me right, when I commenced to make water gas.

202 Q. From that time until when did you have charge of these works?

A. Until about five years ago.

Q. Did they use more than one system of the manufacture of water gas.

A. Yes, sir.

Q. What system did they use?

A. They used the Springer awhile, until I put them — the system which they are using now, after my own patents.

Q. Have you made any study of the standard works on the manufacture of gas?

A. Yes.

Q. Both coal and water gas?

A. Yes, sir.

Q. How long have you been paying attention to the subject of water gas?

A. About twelve years; I think about that; may have been fourteen years.

Q. How many different kinds of apparatus for the manufacture of water gas have you examined the construction of?

A. I don't know that I could answer the question without counting them up. I will say substantially six or eight, perhaps more—that is, after they were erected; that is not including what I have studied on paper.

Q. Have you ever made any extended search and examination of the patents granted in England upon water gas?

A. In what time?

Q. Granted in England upon the subject of water gas.

203 A. Yes, sir.

Q. How extended search and examination did you make?

A. I sent through my patent attorneys to England to get an abridgement of all patents on the subject of gas from sixteen hundred—a little after the year sixteen hundred. I don't remember what year, but it was soon after sixteen hundred.

Q. Did you make an examination of that abridgement?

A. Yes, sir.

Q. Was that abridgement published by the patent office in England?

A. Yes, sir.

Q. What examination by search of the patents granted by the United States have you ever made of water gas?

A. I sent to Washington and got the patents—all patents of a subclass called water gas and oil.

Q. How many patents, probably, are there?

A. I don't know that I could tell you; I could guess; perhaps there was 100 or 150 copies which I received; I am not sure about the number; I don't remember as I counted them.

Q. How much and how extended examination of these patents did you ever make?

A. I think I read the claims and specifications of most of them.

Q. As to the others?

A. The others, why they were patents that I didn't think had any merits at all and could not be used, and I did not give up the time to read them.

Q. Have you ever had anything to do with patents in relation to any other apparatus or machine?

204 A. I obtained a patent for oil burning for using under steam boilers.

Q. Did you *made* any examination of patents then?

A. Not in particular, I didn't.

Q. Now, I will ask you to state to the jury the theory on which illuminating gas is made.

A. If the court will permit I have *have* to make a little explanation chemically, in order for the jury to understand me, if they are willing to take up the time.

The COURT: Make it as briefly as you can.

WITNESS: I would state that gas, as we know it for illuminating gas, is composed of different elements. What we call coal gas is made by putting coal into a retort and driving the vapors from the coal, and only bituminous coal can be used in that way, and the vapors coming from the end of the retort through a heated retort, and is fixed or broken up so that the composition of the vapor *are* different, but in ordinary temperature it will condense or will go back in tar or light oil again. That is what the vapor is. That is composed of hydrocarbon and hydrogen. There is a little oxygen and a little carbon acid and a small per cent. of nitrogen.

The mode of making water gas is to take the elements of water, which is composed of two gasses, oxygen and hydrogen, decompose the composition of the water, to unite it with the carbon coal, which under high temperature has a stronger affinity for the carbon than it has for the hydrogen, and the oxygen and hydrogen will only mix chemically in two portions—that is, one of oxygen and two of hydrogen. As soon as you liberate one item of oxygen you limit two elements of hydrogen. The hydrogen will burn with a non-luminous flame, no light. It's on account of the absence

205 of the carbon. Water gas is made from any kind of material that is hard carbon, which is the best to make it from on account of holding its form. You blast it up until you get a very high temperature. In turning the steam through the fire the water is decomposed, the oxygen unites with the carbon, and that will form in two portions until united—in two portions—that is, one of oxygen and one of carbon—or until united with one item of oxygen and two items of carbon. That is gas, and in the other way you unite it one is carbonic acid and one is carbonic oxide. The carbonic oxide is gas—that is, taking one item of oxygen in burning & taking one other item of oxygen, to form the carbonic acid, it will burn with a blue flame. That would be carbonic acid, after it had gone through the second composition. In passing this steam through the

carbon it takes up and forms this gas which helps to make the flame or gas. As soon as it liberates the hydrogen which is chemically mixed, that will burn with a blue flame. In order to give that light the giving qualities you have got to add carbon vapors to it. In doing that we use the best means, some carbon oils which will evaporate easily, and this is only chemically mixed with the gas. What we have to do then is to change the composition of hydrocarbons, in order to make your gas illuminating, that they will carry along with it the ordinary temperature and an ordinary pressure, so that they will not condense and go back and leave it as non-illuminating gas, which we call poor gas, as it is commonly known. In passing the steam through the fires we put in the oils above the fire because they can't stand the heat. To go through that steam
206 it would decompose them and make them in lamp-black and would simply come out in a volume of lamp-black and be deposited in the pipe. That is the theory of making gas. The mechanical appliances that has been used for the purposes are very old. In 1831, I think it was, if I remember correctly, George Lowe suggested the idea, as the statement says, to t-ke a red-hot coke from the retorts and put it in a vessel and let the air pass through it until it got a white heat and close the bottom and top and pass the steam through for the purpose of decomposing it and enriching it with oils. There are two processes of making gas: one is the continuous and the other is intermitt*ant*. The continuous process would be to put the air & put the steam in so there would be no intermission.

Q. What is the object of that?

A. The nitrogen being an element which is not combustible and (neither will it support combustion), *and* your air continually going in, you will get too much. The nitrogen is shut off from the outside, which is oxygen, about twenty per cent. of air.

Q. Has there been any other system causing gas to be illuminating except by putting in oils?

A. None except oils, or substantially the same as oils, tar, grease, or some carbonaceous material.

Q. Now, you have stated as to making gas by George Lowe in '31, what other early manufacture of water gas do you know of?

A. I think there is one of Gillard in '46, in France, and ag-in in England in '49, and there are quite a number of others. There is Ibetson and one previous to that, but the patents have been so numerous every year, almost every year, there has been more or
207 less got out, and I couldn't repeat them all and I will have to remit*t* giving them all.

Q. Are you familiar with the patent granted to T. S. C. Lowe, which has been offered in evidence here?

A. Yes, sir.

Q. And with the claims of it?

A. Yes, sir.

Q. Now, from your knowledge and study of the manufacture of the apparatus and processes of making water gas described in the processes patent and the various works, I will ask you to state

whether there is any new element described in that Lowe patent or any element what wasn't already known.

A. There is nothing new in the patent that I know of, except the application of the superheater to illuminating gas.

Q. I will ask you whether the application of the superheater to illuminating gas that you speak of was known, not as to illuminating gas, but the application of the superheater to that other kind of gas.

A. Yes, sir.

Q. Now explain to the jury what that is.

A. In 1864, if my memory serves me right, Seamons, of England, obtained a patent for a superheater by piling brick across each other, with air openings between them, for the purpose of saving the heat that would come from the furnaces going to the superheater, and it would retain the heat.

Q. How were the blasts arranged in relation to the fire in the Siemens process?

208 A. I don't know as I could describe it minutely, but they would burn gas that would come off of the fire in this superheater or to heat this superheater. Where the flame would come they would admit air.

Q. What is that gas that comes off of the fire there called?

A. Carbonic oxide if it burns.

Q. Explain to the jury how that Siemens invention of '64 was applied to illuminating gas as described by this Lowe patent which is offered in evidence.

A. I don't know as I get your question just right.

Q. State in what way the principal of the Siemens process is applied to the illuminating apparatus by Lowe.

A. He placed his superheater near the generator.

Q. How were the superheaters heated prior to the Lowe patent?

A. By escaping gas by the fire.

Q. Go on and explain that.

A. In the Lowe apparatus as he has shown it here, the superheater stands very near—you will leave out of your mind so far as this part of it is concerned—you can leave that part out of your mind; you can also leave that part there, as this is no part; this is simply the boiler or the place where they intended to generate the steam; but this is the shell or case of which is iron or steel; this is also the shell; this is lined with firebrick—brick that they use in ordinary coal or gas works or any other place where they are using a high heat; this is lined with firebrick; that is the grate in here; this is connected by a pipe which conducts the gas down to the bottom of the superheater; this heats this very hot down to

209 the bottom. That will have a tendency—the top fire has a tendency to cool the gas. It goes over this part until it becomes hot by the gas on top. We build a fire in the stove; they put in quite a lot of coal in the stove; they let the blast up in there and all at once there comes a putt out of it. It's the explosion which takes place caused by the gas on top. After the fire gets hot enough on top there is no such explosion; the combustion takes place after

that had become hot; until the air had become exhausted in passing in the coal, they would shut off; they would turn the steam on the bottom of this generator. In going through that carbon would form a carbonic oxide which would go back in water. That passes over and comes down through this pipe. The oil is there introduced in that pipe and followed down with the gas and passes away.

Q. In the manner in which that superheater is heated *is* by applying the Siemens process to the illuminating apparatus, is the only thing that is entirely new in the Lowe patent?

A. Yes.

Q. About how deep is it necessary to have the fuel in a single fore when sending the steam up through it to decompose it for making gas?

A. It would depend somewhat on the kind of fuel used.

Q. Say Connellsville coke?

A. It would have to be two or three feet; the finer the coal or finer the coke it would be less depth. It depends how far the air will travel through before the oxygen is taken up.

210 Q. In making water gas where there is a single fire used what depth is the fuel used to make water gas successfully?

A. They usually put it from five to seven feet sometimes. I don't say they maintain it at that.

Q. You are familiar with your own patent which was granted to you and Mr. Ryan and which has been in evidence here. You may look at the patent number 297,162, granted to yourself and Mr. Ryan and offered in evidence here, and state what is claimed in that patent as your invention.

A. This is a process claimed, the within-described process of manufacturing gas, which consists in superheating and decomposing steam by passing it down through incandescent of highly heated fuel, then passing the resulting gases through a second body of heated fuel for converting any contained carbonic acid into carbonic oxide, then drawing the gases into an injector and commingling them with volatile hydrocarbons and then discharging them over the fire-bed. Shall I e-plain the process or object of it?

Q. Yes; you may explain.

Mr. DUNDAS: What do you call that?

Mr. RAUM: The process claim. You may explain what is meant by that as you understand it.

A. As I have explained to the jury, it requires the heat to decompose the water and also to decompose the oil vapors; they are not the same combustion. When you first handle the material, in other words, to change them so they will carry along the gas in an ordinary temperature, it's no matter where we get that heat from or how we get it so that the material treated will be subjected

211 to that heat. The object of this claim is to do away with the high generator and taking from the hot gas, which we run the fire very low, in order to get the hottest fire on top.

Q. State whether in that process you use more than one fire.

A. We do.

Q. You may state what advantages you claim arising from the use of two fires other than one.

A. In passing the steam through one fire there may be some portion open, or a clinker or something to that effect, w-ere the steam passing through would seek one channel; perhaps if there was much carbonic acid in its element we have to purify. In passing the steam through the fire if there is any undecomposed steam not decomposed in the first fire it goes up through the other fire and is more liable to be caught and decomposed in the next fire. It's just as effective as a big body of coal would be, as the air coming from the bottom of the fuel, as seen, has exhausted or taken up the carbon; it answers, perhaps, for the combustion, and from there on the carbon is heated by contact with the gases passing from the fire. In this way we use sufficient fire to consume all the oxygen in the fire. This couldn't be done if we had to use the gas arising from it to heat some other chamber. In passing these down my apparatus arises in undecomposed steam in the second fire or it converts carbonic acid into carbonic oxide.

Q. In using two fires, state whether you use as thick a fire in each chamber as you use in an ordinary fire.

212 A. No, sir.

Q. What difference is there?

A. The difference in our apparatus we depend upon a direct heat from the fire.

Q. I will call your attention to patent number 361,078, issued to yourself and Mr. Ryan. You may state to the jury what you claim there as your invention and the advantages you claim in it.

A. These claims are for the arches; a combination of the two fires and arches.

Q. Perhaps you can explain it better, so they will see it better there, from this.

A. I will explain the arches on this first. The distance from the grate bars to the arches is just high enough so the charging doors come immediately under the first arch. In blasting up that arch that arch comes there, which lies near the fire, near the blower, blasting the air in this pipe; that is the same inside of the construction as the one on the outside, and there is a cross-section. We blast up both fires at one time. Those arches are made and depends on the size of the generator or construction of the arch; you take the size of a generator that is suitable and put on five arms. A small generator we put on four arms; a large one we might put in six, leaving this space in here, perhaps four-fifths of the entire space, two-thirds, or whatever it might be. There is no limit for that. These arches act the same as a retort; it answers for the same purpose as a retort in making coal gas. It fixes the carbon vapors; that comes in the center before it can distribute

213 itself. When it comes from the center from the outside it runs to the center through the gases or vapors and distributing themselves in different branches and passing down through these openings and meets the gas and comes up through. In using

this we turn the steam on top; that generaltor would not be used for fixing any gas or fixing any hydrocarbon in this first instance; we have the benefit of two blasts on these arches before we use them. This is the second run; we turn steam on and our arches are hot down here below. If our fire is properly made, perhaps it will be red hot; if its gets down low we have got to get it up. This will show more details, perhaps. The connection is shown in there between the two. This is the nozzle fastened in without any valve. This is the large door. Above here we put in one injector, but we don't use that only when we have heavy oils that we want to draw out. This is the pipe. This is the vaporizer. The oil enters in that pipe and vaporizes it, and it will go in any one of these arches. The next place we do the same thing on that and turn the steam on this fire and come on to the other one. The other one, the arches in this one, they lay across this way about six inches wide and five inches on top; we have the benefit of two blasts each time, which there is no other furnaces made which has the same advantage in fixing the oil vapors.

Q. I will ask you how much of a space there is left open by your arches; how much of a cupola space.

A. It depends on the size of the furnaces considerable. I will say there is probably about eighty per cent. or near that, more or less; seventy-five per cent.

214 Q. That is left open, right straight up through the top of the apparatus?

A. That is taking the whole area.

Q. It's left open from the fire clear up to the apparatus, is it?

A. Yes; the per cent. of area would vary with the size of the apparatus.

Q. How are these arches heated in your apparatus?

A. By direct heat from the fire, and they may be heated sometimes by a blast above, but the proper way is to heat them by a direct heat.

Q. What difference do you claim there is—according to your understanding of it, what difference is there between your apparatus and the way of heating these arches and the mode used by Lowe in heating his superheater?

A. He depends entirely upon the products of combustion which escapes from the generator, while I depend upon a direct heat from the fire.

Q. I will ask you whether you have any such a thing as a superheater.

A. No, sir.

Q. Or a carborator?

A. No, sir; nothing further than the arches; I understand your meaning; the carborator is any form which may carborate the gas or add carbon to it.

Q. I will ask you whether the inside of your apparatus is divided into two departments.

A. No, sir; it's entirely in one—that is, each side of it.

Q. I will ask you whether either one of the cupolas is divided

at any place between the fire and top into two distinct departments.

215 A. No, sir; these arches are put across.

Q. As shown in the drawing?

A. Yes, sir.

Q. Which drawing is that?

A. It's patent of April 12th, 1887.

Q. Drawing number what?

A. 361,078.

Q. Number of drawing.

A. Three. It's not divided in any way. That might be a straight bar across there, so far as that is concerned, without any obstruction, perhaps five or six inches wide; you simply lay it in the furnace or hang in the furnaces and support itself from the sides. There is no division in it at all.

Q. I will ask you now whether in carborating your water gas with naphths or petrolium it is necessary to retard that gas or the oil or to have it pass through any considerable length of heated firebrick or anything of that kind in order to fix it.

A. No, sir.

Q. What does fix it?

A. The heat changes simply the composition of it. As soon as that is accomplished it can be immediately removed from the chamber in which it is fixed.

Q. When the oil is brought to a certrin heat it becomes a fixed gas immediately?

A. Yes, sir; just as soon as it comes in contact with the heat.

Q. About what degree of temperature does steam decompose?

216 A. It would commence to decompose slowly, perhaps, at about 800; from that on up as high as you could heat any carbon; it would be very slow at 800; it could hardly be noticed until it got to 1,000; even at 1,000 degrees it wouldn't be high enough for gaslight, perhaps, to make it rapidly.

Q. I will ask you to look at patent number 196,495, issued to Theodore G. Springer, which has been offered in evidence, and state whether you have examined that patent.

A. I have on paper.

Q. Have you examined the claims to it?

A. Yes, sir.

Q. Now you may state to the jury what those claims are.

A. I can state substantially that the claims claimed in an automatic gas apparatus or one you can put fire in in the daytime and turn on his oil and water and it would make gas the rest of the night or any time that they would want it.

Q. Explain to the jury from the drawings the description of the process and apparatus that he sets forth in that patent.

A. Do you want me to read the claims?

Q. You read the claims and explain the drawings and description.

Q. Perhaps I had better explain it as I go along. The chamber

in which he proposes to put his coal is from there down to the grate bar. That is intended to open at the bottom, and a smoke-pipe on top so he can let air in there, and from its own draft it will burn up until it gets hot. In the evening, as his specifications speak, he would close that up, take off the stack, close the lid, and open the water and oil valves below; this is what he calls his heat-
217 absorber. He shows a wall built around that shell or iron casting; there is no loose brick-work in there; it's a space between the wall, the brick-work, and the shell, because that is the heat-absorber. The second claim is as follows: In combination with a gas-holder and an automatic regulator, a gas-generator consisting of an exterior shell and an interior lining, with air space between them, and a perforated division or diaphragm inside the lining, forming a heat-absorber and a combustion chamber below the division, whereby the heat may be absorbed during the daytime, for use in the manufacture of illuminating gas at night, in the *proposition* as such gas as is being consumed, as set forth. Right on the dotted lines is the division in his generator, about half way up. That is the open chamber from there on to the top. That is the diaphragm. The theory, I will say, was with him that he could turn on that water, that being referred to in each apparatus, and the valves on these pipes discharges the water and oils in the fire. The theory that that gas will rise and go up to this pipe, what he calls the heat-absorber, and down to the bottom of the washer and passes up through the water to the tank; that washes his gas and goes in here; as the gas is made it raises that up and continues to shut off. He intended when that would lower down again to make gases without any blasting about it or admitting air, but as the gases were used it would let down and lower this in order to admit the material. The third claim is the generator. The generator consisting of the outer shell A, inner brick lining B, and space *a* between them, and provided with the doors *b d*, perforated diaphragm C, grate D, air-pit E, valve F, and stack E, all substantially as and for the purpose herein set forth.

218 Q. I will ask you whether, as a practical gasman, *whether* it's practicable or possible to operate a gas apparatus as it is claimed in one of these three claims in this patent.

A. No, sir.

Q. In the descriptive part of this patent it is stated: "The nature of my invention consists in the construction and arrangement of an automatic machine for producing a fixed gas from petroleum, or its products, and water, and also storing away in the daytime a sufficient amount of heat to generate what gas is consumed through the night, as will be hereinafter more fully set forth." I will ask you, as a gasman, whether it is possible in an apparatus in the nature described in the drawings and specifications in this patent to heat it up in the daytime so as to feed water and oil into it at night and make gas.

A. No, sir.

Q. I will ask you to compare the original patent, 196,495, issued to Theodore G. Springer, offered in evidence in this case, with the

reissued patent, number 10032, issued to Theodore G. Springer and in evidence in this case, and state whether, in your opinion, the reissued patent is for the same alleged invention as is mentioned and described in the original.

A. This contains four claims—one, two, three, and four.

Q. That's the reissued?

A. That's the reissued, which does not appear in the original; five, six, and seven are the claims, as appears in the original.

Q. Now, I will ask you whether the claims one, two, three,
219 and four in the reissued patent are for anything which is described or intimated in the original patent that was intended to be described by the patent.

Objected to because the claims show for themselves, and that the claims are the best evidence.

Mr. DUNDAS: I think the jury are entitled to place their own interpretation. They have been offered in evidence for the jury to consider. They are in print in the English language. I don't think it is competent to show by any witness.

Mr. RAUM: I propose to follow this answer up by asking him what there is li-king in the original patent which is claimed in the reissued.

The COURT: He may explain the difference, if there is any.

Objections were overruled; to which ruling of the court the counsel for the defendant then and there duly excepted.

Q. You may explain the difference between the two specifications of the two patents and the claims.

A. Referring to the claims?

Q. Referring to the description of the apparatus and as to what he states his invention relates to and the claims.

A. Will you permit me to refer to the claims?

Q. Yes.

A. Claims one, two, three, and four is an apparatus which can be used for making gas, and has the ad-ition of the superheater filled with refractory materials above the diaphragm, and he claims to heat that refractory material by a current of air, burning carbonic oxide by the means of the air above the coal bed, and decom-
220 posing his oil or adding his carbon by fixing it in his refractory material, which you would put above the division or arch: here he crosses them. In the third claim he says: "A cupola or gas-generating apparatus having a combustion and decomposing chamber for burning solid hydrocarbons, wherein water and hydrocarbon may be mutually decomposed, and a fixing chamber partly or wholly filled with some refractory material for absorbing heat and converting the hot gases from the combustion chamber into a fixed gas, the two chambers being formed in one structure, substantially as and for the purpose specified." The apparatus, as described in the reissued patent, makes an apparatus which is different, from the fact it has no diaphragm, as in the first instance, and with the addition of a fixing chamber.

Q. Is the matter of a fixing chamber described in the original?

A. No, sir; not except restoring the heat.

Q. Now, I will ask you whether there is any substantial difference between the mode of heating the fixing chamber described in this Springer reissued patent and by the mode adopted in the Lowe patent in heating his superheater.

A. In the principal, you mean?

Q. Yes, sir.

A. No, sir.

Q. Are you acquainted with what is known as the Granger patent, number 234,400, issued to A. O. Granger and Jno. H. Collins, Jr., November 16th, 1888 (handing plaintiff letters patent marked Plaintiff-' Exhibit "D")? I will ask you to look at that drawing and specifications and state in what way it differs from the Lowe patent in evidence.

221 A. There is only a mechanical difference. I don't know as there is any novelty. The only difference is that the connection from the generator into the superheater is at the top instead of coming down to the bottom. It brings the superheater near to the top of the fire, or does not leave so much space, or it is not quite so far away, as did by bringing it down to the bottom.

Q. All there is to that they shorten the pipe?

A. That 's all there is to that, except there is a claim about the blast pipe. As to the mode of heating the superheater, it's the same. It's substantially all through, except it connects here at the top instead of going down, as some remark, by the gas pipe, and it goes to the bottom of the superheater. I should say the combustion takes the same course as the others.

Mr. RAUM: I will offer letters patent No. 234,400, granted to A. O. Granger and Jno. H. Collins, Jr., in evidence.

Q. None of the claims of this reissued patent *which* has stated there are two compartments in one single cupola. I will ask you how that is supported.

A. By a brick arch being thrown over the generator, closing it from the lower portion.

Q. Have you ever seen the apparatus that is manufactured now by the owners of the Springer patent and called the Springer cupola?

A. Yes, sir.

Q. How much of a space is shown; how much of a space is occupied by that arch across that, as shown by the drawings in the patent, or, if you can't tell by that, how much as a matter of

222 fact is used in the apparatus erected?

A. How much of an area is covered?

Q. Yes.

A. I should say there would be about ninety per cent, perhaps, of the area covered—not left open, but covered.

Q. I will ask you whether you know of any other builder of a gas apparatus placing a generator and superheater in the same shell as is referred to in that reissued Springer patent.

Objected to.

Q. I will make it prior to the granting of this reissued patent offered in evidence and in use.

A. There is a patent granted to Mr. Van Steenburgh, if I remember correctly, in 1881.

Q. I will ask you is that is the patent you refer to.

A. Yes, sir.

Mr. RAUM: I will offer in evidence letters patent number 248,070, granted to B. Van Steenbergh, dated October 11th, 1881, being Plaintiffs' Exhibit E, hereto attached.

Q. You may go on with your statement in regard to that.

A. The claims of this patent takes on the same form as most of the other claims as a gas apparatus, with a fuel chamber, C, and a fixing-chamber, B, which includes from that point in there, and in the top of the chamber he runs this tile. It shows that is the end of the tile cut in two; this is the end of the tile or laying or over, so that would be showing the height of it and resting in the wall and this resting in the wall in the opposite direction. This is the grate; this is the bottom; that's the grate there. He delivers his material or oil into the fire or close to the fire; anyway, that is his fixing chamber above the fire.

223 Q. In the same cupola?

A. Yes, sir.

Q. I will ask you whether there is any substantial difference between the arranging of this tier of tile and the checker brick-work in the Springer apparatus.

A. It's substantially the same. Laying the brick across in there to support on the arch or whether the tile would extend the full length of the chamber, it would rest on the walls of the side.

Q. I will ask you whether you know, as an expert in the history of water-gas making, whether any of the early apparatus made by T. S. C. Lowe had above his furnaces—that is, his generator and superheater in one shell, one above the other.

A. I don't know whether I could be positive in regard to that or not. There is a furnace where the superheater stands; it's in one shell, except there is an offset, but I don't remember whose it was. The superheater would set in the same shell, with the exceptions of an offset to dump the coal into. I don't know what I could call the patent.

Q. I will now ask you whether that suit in Iowa, which you stated to Mr. Eads had been dismissed, has been dismissed or not.

Objected to on the ground that the fact can't be proved by parole testimony.

Q. I will put the question in another way: Was your representation and statement to Mr. Eads that that suit had been abandoned by the National Gas Light and Fuel Company against the gas company at Creston—I mean had been dismissed—was true or not?

224 Objected to as leading. Objections sustained; to which ruling of t-e court the counsel for the plaintiffs took exceptions.

The COURT: If he was there and inspected the record, he may show that.

Q. Did you ever see the record in that case or a certified copy of it?

A. I have seen a certified copy in my attorney's hands.

Q. Did you ever look it over?

A. Not in particular.

Q. Do you know that certified copy? Have you that copy now?

A. I think that I have, but not here.

Q. Do you know whether that copy contained an order to dismiss the suit or not?

Objected to. Objections sustained; to which ruling of the court the counsel for the plaintiffs then and there duly excepted.

Q. Which one of these patents was referred to by you in that conversation with Mr. Eads as having gone through an interference in the Patent Office?

A. The latest patent——

Mr. SELLARS: Let him state the conversation.

Cross-examination by F. W. DUNDAS:

Q. I think you stated in your direct examination, Mr. Pratt, that you had never seen the bond introduced in evidence here until it was introduced in the trial. Is that correct?

A. That was correct.

225 Counsel for plaintiffs admit receiving letter marked Defendant'- Exhibit "E."

Mr. DUNDAS: We offer upon the part of the defendant the following letter in evidence:

CHICAGO, 4, 25TH, 1889.

Messrs. Henry Pratt & Co., 875 Halstead street, city.

GENTLEMEN: I have a bond here for your approval. Kindly call and see the same as early as convenient.

Yours very truly, C. W. POWELL.

Q. You received that letter?

A. Yes, sir.

Q. About the time it purports to have been written?

A. Yes, sir.

Q. Did you go to Mr. Powell's office after receiving that letter?

A. I did.

Q. Did you meet him there?

A. No, sir.

Q. What did you do after going to his office?

A. I don't remember what I done that day after going to his office.

Q. Did you get back to his office the second time?

A. I think not.

Q. What steps did you take, if any, towards complying *to* his request in examining that bond?

226 A. I didn't take any at the time; it was some time afterwards I gave it to Mr. Richards.

Q. Do you know, of your own knowledge, what steps Mr. Richards took?

A. No, sir.

Q. How long, or about how long, was this letter received by you after you had been here in Paris asking for a settlement with the company?

A. Oh, it was soon afterwards. I don't remember just how soon. It may have been anywhere from one, two, or three weeks for all I know. I don't know the exact time.

Q. When you came here to Paris and asked for a settlement upon this apparatus whom of the defendants did you first meet?

A. Mr. Z. E. Powell, I believe.

Q. Where did you meet him?

A. I am not sure, but I think it was at the works. I won't be positive about that.

Q. What took place between you and he in regard to the matter in the conversation?

Mr. RAUM: I object as not cross-examination. I asked him about a conversation between *gim* and Mr. Powell and Mr. Eads in the court-house square.

Q. Do you remember the conversation that you had while there in Paris about that time with Mr. Eads and Mr. Powell in regard to a bond to be given by your people?

A. I remember the substance of a conversation, but I don't remember the wording.

Q. In that conversation did you not agree to furnish a
227 good indemnity bond to protect them in the amount of $7,500, and was it not there agreed that this bond should be sent to you at Chicago for your approval and for the purpose of having it signed?

A. No, sir; I don't remember any such agreement. I did speak of a bond, but I don't remember of no agreement.

Q. I understood you to say in your direct examination, in the conversation which you had with Mr. Eads and Mr. Zed. Powell just prior to the signing of this contract, that you told Mr. Eads and Mr. Powell that a suit had been brought against your people in Iowa and had been dismissed, and that the Springer people were threatening your customers. Was that correct; was that your evidence?

A. As to the best of my recollection, those are the words that was used or the substance of the conversation.

Q. You again stated in your evidence that Mr. Eads and Mr. Powell were notified by you that your customers were threatened by the Springer people before they signed the contract?

A. Yes, sir.

Q. All your customers who bought of you were likely to be threatened?

A. Yes; that is the reason we agreed in the contract to protect them.

Q. Was the statement correct that you made? In other words, was it a fact that your customers were being threatened at that time by this National Gas Light and Fuel Company of Chicago?

A. I had heard of it.

Q. In how many instances, Mr. Pratt?

A. That I couldn't tell you.

Q. Well, about.

228 A. Well, but one, perhaps; perhaps more. I don't remember now.

Q. Which one was that?

A. I think it was the Goshen people. They had been threatened about that time.

Q. You knew the Goshen people had been threatened by the National Gas Light and Fuel Company at the time this contract was signed?

A. Only by hearsay.

Q. What other plants had you?

A. I had one at the People's works, in Chicago, and Goshen, Indiana, and Cresline, Iowa.

Q. Outside of the Chicago plant you had two?

A. Yes.

Q. Suit had been brought prior to that time against one of these two?

A. In Iowa.

Q. How long before this contract was signed had you put in the Goshen plant, Mr. Pratt?

A. I think it was six or eight months; perhaps longer. I put it in—I think I put it in the fore part of '88. I wouldn't be right sure. Along, probably, in May or June. I am not sure without looking at my books.

Q. Was not the People's plant, of Chicago, put in by the consent of Mr. Springer?

A. I don't know.

Q. Do you know Mr. Springer personally?

A. Yes, sir.

Q. Did you work for him or with him?

A. I never worked with him further than——

229 Q. Was you employed by the same company?

A. No, sir.

Q. Where was he employed at this time the plant was put in at the People's plant, at Chicago?

A. Not any place that I know of.

Q. When that plant at Chicago was put in was not the consent of Mr. Springer given to the People's Company there to put it in with the understanding that it would be called the Springer plant?

A. The president of the company gave him permission to experiment in the first place.

Q. What did he have to do with the putting in of that People's plant?

A. He commenced to superintend the putting of it in.

Q. Supposing it was put in by his consent, *it* he was superintending it.

A. As I said before, he had permission to experiment there at that time, being the first one that he had put in.

Q. Mr. Springer put in this People's plant at Chicago, did he not?

A. No, sir, the People's Company put it in.

Q. He superintended the work?

A. Only partly.

Q. How many of these plants have you erected since the contract with the Paris people?

A. Two, I think.

Q. Has there been any litigation or threats of litigation over the putting in and using of these plants by the National Gas Light and Fuel Company?

A. One of them was.

Q. How as to the other?

A. The other was not.

230 Q. In every instance in which you have put in these plants, except one, there has been litigation with these people, has there not?

Objected to on the ground that the record is the best evidence. Objection sustained: to which ruling of the court the counsel for the defendant then and there duly excepted.

Q. In every instance except one you have spoken of was there not threats of litigation and annoyance of your customers by these Springer people?

A. I heard so.

Q. I think you testified in your direct examination you had been employed in the gas business and engaged with gas works for a good many years?

A. Yes, sir.

Q. With coal-gas companies for about how long?

A. I was with the coal-gas companies for about three years, I think—two or three years it may have been—before I commenced water-gas business.

Q. Do you understand the chemical changes that take place in the making of coal gas?

A. Yes, sir.

Q. You know what a substance is in the matter?

A. Yes, sir.

Q. You understand what the term molecule is?

A. Yes, sir.

Q. You apply the term molecule in the gas business?

A. Yes, sir.

231 Q. Can you state to the jury whether the change caused of water turning into steam causes a separation of the molecule-?

A. No, sir; it is simply an expansion.

Q. Don't we expand a piece of elastic by separating the little molecules?

A. They still hang together.

Q. Do we not pull them further apart?

A. You don't separate them; you simply reduce the era when you stretch it.

Q. Is not a physical change a change in the form of arrangement of the molecules of the matter, and is not a chemical change a change in the arrangements of the atoms which go to make up a molecule?

A. Yes, sir.

Q. The changes such as you speak of here—that is, a change of water into steam—what kind of a change is that, mechanical or chemical?

A. It is only a mechanical change.

Q. Now, changing from steam into the decomposition of steam?

A. That's a chemical change.

Q. What is that?

A. That is separating the oxygen from the hydrogen.

Q. Give me the elements into which it separates.

A. There is O and H.

Q Now the full term for it.

A. Full term of the O and H?

Q. Yes.

232 A. It's oxygen and hydrogen.

Q. How is the decomposition of steam accomplished?

A. You can decompose steam without running it in contact with heated carbon.

Q. The process you described when the steam is decomposed, what does it become?

A. It becomes hydrogen and oxygen.

Q. Is there some fault or failure in the process when carbonic acid is formed instead of carbonic oxide?

A. It may be the fault in the process or it may be the fault in the workman.

Q. What would cause that?

A. If the fire is not so arranged so as to take on the necessary amount of carbon to form carbonic oxide, then it will take on more oxygen—two to one will be taken on—and it will form a carbonic acid; but if you run that through a sufficient amount of heated carbon the carbon is still added until there is equal parts.

Q. If it is not run through a sufficient carbon heated high enough, it's carbonic acid?

A. Yes.

Q. If it's run through high enough heat, then it's carbonic oxide?

A. Yes, sir.

Q. If one fire is deep enough and it continues running through,

one fire will do as well as two, won't it? The decomposed steam, if run through a single generator which is sufficient in depth and quality, will produce the same gas that would be produced by running it through two fires?

233 A. Yes, sir.

Q. And running it through two fires instead of one is like the miller twice boulting his flour—that is, to be sure to get the chaff out?

A. No, sir; if you had a faulty bolt. (No apparatus which was ever made is practically perfect.) If you run that through another bolt you take out some more chaff.

Q. Running through two imperfect bolts would be better than running it through one good one?

A. Yes, sir.

Q. The only difference is, so far as we have gone in this case, you do twice what the Springer people do once?

A. No; we accomplish exactly the same results.

Q. It can be done with one fire that has a sufficient depth and a sufficient heat?

A. Yes, sir—that is, supposing it's a perfect fire.

Q. You spoke some time ago about the depth of the fire. In passing a quantity of air up from the bottom the air would pass up a certain distance when it would cease to be air, and that the rest of the fuel above that point would be heated, not by being united with oxygen, direct contact?

A. That is, it will be heated by the contact by the heat arising from below.

Q. About how far up through fuel of this character will air pass before it ceases to be air by losing its oxygen?

A. It depends almost altogether upon the size of the lumps of fuel and the kind of fuel it is.

234 Q. Does it not also depend upon the force of the draft or blower which forces the air up, and upon the amount of air which is forced up?

A. It might depend something upon that, but not a great deal. It comes at once in contact with the heated carbon and loses its oxygen.

Q. There would be a greater quantity passing up in a given time and it would go further?

A. Not necessarily; your coal is consumed faster where the air strikes it. If you blow the fire hard the fire will burn faster than if you would let your fire go through slow.

Q. Are you familiar with the Hyde Park fuel-gas apparatus?

A. Yes; we have done some work for them.

Q. Do you know how deep their fire-boxes are; how deep the beds of fuel average?

A. I don't know; they are quite deep; they are very deep furnaces, but I don't know how deep. They only make fuel gas; they don't make illuminating gas.

Q. You make illuminating gas?

A. Yes.

Q. That is done after it passes up through this?

A. They illuminate by condensing; by having little drops of porcelain. Some of them use porcelain; some of them use wire, and preparations of different kinds.

Q. Are not these beds about twenty feet deep?

A. I don't know how deep they are.

Q. Is there any combustion taking place more than four, five, or six feet from the bottom?

235 A. I don't think so, unless it's very course fuel.

Q. You spoke of the Lowe patent of 1875 in evidence, I think, as having no new element, but having one novel application—that is, having refractory material in the superheater?

A. Yes, sir.

Q. Was not the new feature in the form of an apparatus itself? Was it not new to heat the superheater internally? Had the superheater up to that time—that is (where its object was to make a fixed illuminating gas)—had it not always been heated by an outside heat?

A. The outside was the usual way of heating them.

Q. Wasn't the only novelty about the Lowe patent on account of the superheater being heated by direct on the outside? I will ask you if that was not the only new feature, because the superheater was directly heated from the inside.

A. That was a novelty.

Q. Do you know whether the United States court in passing upon the infringement claim by the owners or trustees of the Lowe patents against the New Haven Gas Light Company did not decide that the Lowe patent was a valid patent? Did not this decision depend upon the single point that the only new feature was that the superheater was heated internally by means of a refractory substance from the inside?

A. It was heated by heat escaping from the generator.

Q. The novelty of the Lowe patent was that it contained—the apparatus contained a superheater that was heated internally instead of externally?

A. Yes, sir.

236 Q. That superheater was disconnected; it was not inside of the shell?

A. I don't know what the one was in controversy; the one in his patent shows it's disconnected.

Q. The Springer apparatus, under patents, reissued patents, contained a superheater heated internally, as was the Lowe heater, whose superheater, instead of being inside of the shell, was outside?

A. He don't show it in his drawing, but he claims it in his reissue.

Q. What do you mean by a superheater, Mr. Pratt?

A. It's a term applied to the chamber that is made for the purpose of secondary combustion.

Q. Super means over and above?

A. Yes, sir; applied to gas business.

Q. Is not a superheater the main chamber in which there is to be an overheat and high heat?

A. That is its meaning, but the terms we apply and understood by gas people is a connection used in water-gas plants.

Q. Would it not be any material of the kind that I spoke of, whose object was to superheat when connected with water gas?

A. Yes, sir.

Q. And chamber, whose object was to perform that, would be identical with a superheater, whether it was known by that name of not?

A. No, sir.

Q. State its object, as near as you can.

A. There are a great many gas apparatus made without any superheater, and yet there is a chamber in there, as we term it, in gas manufacture.

237 Q. What is the object of a superheater in the water-gas apparatus?

A. It has usually been used for fixing the carbon vapors.

Q. If a water-gas apparatus had a chamber whose object was to fix up and heat this gas, that chamber would be a superheater, would it not?

A. Not necessarily.

Q. If it performed, which you say a superheater does perform, then it would be a superheater?

A. Not necessarily. It wouldn't be a superheater unless it was practically constructed as it is practically understood.

Q. A superheater, as the term's applied in water-gas apparatus, is a chamber which accomplish- certain work?

A. Yes, sir.

Q. If a chamber in a water-gas apparatus does perform that same work or functions which a superheater performs, it's a superheater?

A. Not necessarily. Not any more than a horse is an ox.

Q. A superheater in a water-gas apparatus is so called, not from its name, but from the work it does, from the object it accomplishes, what gives its name?

A. We don't understand it that way. A retort will accomplish the same object which a superheater does, yet it is not called a superheater.

Q. Will it do in a water-gas apparatus?

A. In making water gas.

Q. What would the difference be between a retort and a superheater?

A. A retort will fix the vapor of carbon without being in connection with water gas which is generated by steam in a generator.

Q. Doesn't do the same work?

238 A. That is, you pass these two gases together you have the same composition.

Q. What aside from a superheater will fix these two sets of gases? What other part of a water-gas apparatus except a superheater will do it?

A. You can mix them together; if you fix your oil vapors, you

can run it directly in your retort. It may be fixed in a retort or any other chamber. Perhaps I may misunderstand you. I think you want an answer whether it is possible.

Q. A superheater by any other name would still be a superheater?

A. Yes, sir.

Q. With a certain chamber filled with refractory matter, doing the work of a water-gas apparatus, that chamber, which you term a superheater, would itself be a superheater?

A. It would still be what we call or term a superheater. You might have a chamber that wasn't filled, you might have the same object in there, and yet it wouldn't be termed, as we term it, a superheater.

Q. You told me the original Springer patent, with the claims of the original Springer patent, did not include the superheater. I will read a paragraph from the original Springer patent: "The generator A is made of boiler iron tightly riveted. The inside is lined with firebricks B, so arranged as to leave a dead-air space, A, of about three inches between the lining and the outside shell." What do you mean by a dead-air space?

A. That is the open space running around, so the brick-work will not come in contact with the shelves. The theory of that was
239 to prevent radiation.

Q. This generator stands perpendicular and has a perforated diaphragm, C, about the center, above which the generator is filled with some refractory porous substance. That is the cut of the generator, is it not?

A. Yes, sir.

Q. That is perforated?

A. Yes, sir.

Q. Directly below the division C is a door, B, tightly fitted to admit coal. About fourteen inches above the lower end of the generator is a grate, D, to receive the coal. Below this grate is another door, D, fitted as above, which serves to give air in heating the generator and to remove the ashes. A little above this division C is a pipe, E, as shown. If I understand from this description and this cut, the bot-om part of this shell is what we term a generator, where the fire is?

A. Yes, sir.

Q. There is a diaphragm across here which has openings?

A. Yes, sir.

Q. Above that diaphragm is a chamber?

A. Yes, sir.

Q. Filled with refractory material?

A. I don't think he claims it.

Q. Filled with refractory material, I think I read it. As I understood Mr. Pratt's direct testimony, *was* in Springer's claims, the original apparatus, there was no superheater?

240 Mr. RAUM: No; he didn't say that. He said that the chamber was called by Springer a storage chamber. He said that drawing didn't show it was filled with refractory material.

Q. The description states—he couldn't see through the brick—the description describes it filled with refractory material?

A. It might be, but he don't claim it. It speaks about the chamber.

The COURT: Well, ask him about it.

Q. Does the original Springer patent, as shown by Mr. Springer's description and as given in the letters patent here offered in evidence, describe a superheater inside of the same shell as the generator and filled with refractory material?

A. I didn't read the specifications. I was only reading the claims.

Q. Does he not describe his original apparatus as containing a superheater in the same shell as the generator?

A. I will not say as to that. I was looking at the claims and not the specifications and was only explaining the claims. Will you just sight me the place there?

Q. It takes this entire paragraph (showing witness Springer original letters patent).

A. It speaks of it in the specifications; yes, sir.

Q. I think you spoke in your direct examination, Mr. Pratt, of an early English patent granted to one Siemens?

A. Yes, sir.

Q. Of an apparatus (Siemens has more than one patent, I believe) which contained a superheater chamber filled with refractory material. Did you not say further in your direct testimony that
241 that superheater was only used for the purpose of smelting ore or reducing metals?

A. I can't recollect or recall it near enough to repeat it, there are so many that I was looking over.

Q. Do you or do you not know the object of that superheater in the Siemens apparatus was not to fix illuminating gases, but the gas that was fixed contained from sixty to seventy-five per cent. of nitrogen?

A. I don't know that they used it for fixing gases. They used it for superheating air and not for fixing gases.

Q. Wasn't it a superheater whose object was to fix illuminating gas?

A. It was made to superheat gas or steam and retain the heat that would be carried away. They would return that heat by putting it in the superheater and returning it back to the furnaces.

Q. There was no claim in the Siemens patent apparatus for superheating which did make illuminating gas?

A. No, sir.

Q. Your apparatus consists of two shells?

A. Yes, sir.

Q. How were they connected?

A. With a pipe or a duct.

Q. What is the depth of your generator in the apparatus used here?

A. Well, from twenty-two to forty feet.

Q. You use the term generator in your specifications to apply to what I would call fire-box. You apply it to the whole shell?

A. Yes.

Q. What is the depth of your fuel bed or fire-box?

242 A. Any depth that you want to put it.

Q. What is the average depth in the retorts of this size?

A. Oh, from twenty inches to three feet, probably. It depends on the quality of the fuel and condition of the fires.

Q. If you take one shell and detach it from the other shell and stop up the hole and get the steam directly from the bottom, what would the difference be between it and the Springer apparatus? Outside of you using the spider arches where he uses checker-brick, what difference would there be, except that you use the spider arch, he uses the checker-brick?

A. My experience——

Q. What would the difference be in the construction of the apparatus, giving the mechanical construction?

A. Why, it would be disconnected.

Q. If you disconnect one of your shells, take them right along there and set it off by itself and plug up the hole in the other shell and introduce the steam pipe in the bottom of it, what would the difference be between that and the Springer apparatus?

A. There would be no material difference.

Q. So far as the form of the apparatus is concerned and the mechanical construction of the apparatus is concerned, regardless of the construction, your apparatus is practically two of the Springer apparatuses put together and connected by this pipe, with the brick diaphragm taken out from over the top of the retorts?

A. No, sir; if you take out the superheater it would be without arches, and he would put in arches.

243 Q. You use the spider arches where he uses the checker-brick? These spider arches are refractory material?

A. All are put up that way.

Q. Then this patent of Springer's, when he describes a superheater as being filled with some *of* refractory material, he, in a general way, described your superheater?

A. We don't use any superheater.

Q. What is that?

A. It comes nearer to the form of a retort than it does to a superheater.

Q. What is the difference between this and the superheater on the top part of your apparatus?

A. The difference is ours don't have an arch turned over it and it's not filled with firebrick laying close together.

Q. A superheater may be a superheater not filled with firebrick laid crossways?

A. It would be necessary to have some kind of construction to make it a superheater.

Q. You don't claim it to be a superheater; it must be filled with firebrick?

A. It can be laid with tile.

Q. Why isn't the upper part of your generator a superheater?
A. It's not filled with refractory material.
Q. There is considerable refractory material in there?
A. There is some of it. Springer's is filled with it, so far as the object he sought to accomplish.

244 Q. The difference between the Springer superheater and the upper part of your apparatus is their superheater contains more firebrick?
A. Yes, sir.
Q. Is that the only difference?
A. There is no arch in ours to support this firebrick or whatever is put in there.
Q. It would be a superheater without that arch to support it from below?
A. It would be if you could hold up your material in there—that is, if you use it for that purpose.
Q. What different work or what different object does the upper part — your *the upper part of your* apparatus perform than the superheater in the Springer apparatus?
A. The arch where the oil vapors enters into it going through produces and brakes them up in a small stream of vapor and forms small retorts, unless you use an injector that is heated to change the composition of the oil. That may be done with one arch (I have done it without any), with one arch and nothing else in the chamber.
Q. Doesn't the checker-brick accomplish the same in the Springer that your arch does?
A. Yes, sir.
Q. Your refractory material is in the shape of arches?
A. I don't claim them to be refractory material.
Q. These arches are refractory material?
A. That is, they are made of fireclay.
Q. The refractory material in yours does the same work that the Springer does?

245 A. It does, in a different way.
Q. I think you said something about a direct heat about the Springer apparatus, the refractory material in the Springer apparatus fixing gases by the product of combustion, the upper part of your apparatus fixing gases by a direct heat. Was that true?
A. No, sir.
Q. Are you sure you did not make that statement?
A. If Mr. Reporter will read the question, I will see that I understand it (your idea).
(Reporter reads question.)
A. I don't think I said I fixed gas by combustion; I said they heated their superheater by secondary combustion by gas that escaped from the generator.
Q. You heat your upper apparatus how?
A. I say usually by a direct heat, but not always—that is, we heat it by a direct heat; sometimes we use a blast on top, but not always.

Q. How and why is it that the refractory material in the Springer apparatus is heated from the products of combustion?

A. He runs it through.

Q. Which is direct heat?

A. It's a radiation from the heat or coal in the furnaces, the heat that would come in contact instead of secondary combustion.

Q. What is heat?

A. Heat is the result of uniting carbon and oxygen.

Q. I will ask you if it is not generally the accepted scientific theory of the present day that heat, or what we term heat, is the vibratory waves of ether.

246 A. I am speaking of a direct heat in a direct way.

Q. You say the refractory material in the Springer superheater is heated by the products of secondary combustion; can you explain what you mean by being heated by the products of secondary combustion?

A. It is heated by burning the carbonic oxide gas arising from the carbon during the time of blasting.

Q. You don't put so much coal in one of your fire-beds?

A. No, sir; we don't have a thick fire-bed.

Q. Do you know of any Springer apparatus in use?

A. Yes, sir.

Q. In successful use today?

A. Yes, sir.

Q. They are in use today in large numbers, are they not?

A. I don't know what you call large numbers. They are in use in plenty of places.

Redirect examination by RAUM:

Q. You may state whether it is necessary, in the manufacture of water gas and the carbureting it—that is to say, to make illuminating gas—to have anything more than a generator or to have any superheater or any arches over the fire?

A. Not necessarily; no, sir.

Q. Have you ever made any experiment to demonstrate that?

A. I have made experiments and worked it practically that way for a time.

Q. Where?

247 A. In Chicago, at the People's Gas Light and Coke Co.'s works. Running a generator, we generated—well, perhaps from five to seven hundred thousand feet a day.

Q. Isn't the description of the mode of operation in the Lowe patent in two ways, either putting the steam through the superheater before it goes through the fire and carbureting it or putting it through the fire, then carbureting it through the superheater?

A. I think that is in the specification.

Q. They claim it runs either way.

A. I think that is the way.

Q. What kind of gas do they make at Hyde Park?

A. They make fuel gas without putting the illuminating qualities in it.

Recross-examination by DUNDAS:

Q. Is that the same gas your apparatus makes?
A. Yes, sir.
Q. Before your gas meets with the hydrocarbons?
A. Yes, sir.
Q. It's the same gas that leaves your apparatus at the top of the fire-box?
A. Not the same gas. They turn their attention to making as much carbonic oxide as possible. We make whatever we can, and they direct their attention principally to fuel instead of lighting.

Plaintiff- introduce in evidence contract and letter hereto attached, marked Plaintiffs' Exhibit "A" and Exhibit "B" respectively; also letters patent hereto attached, marked Plaintiffs' Exhibits "C," "D," "F," and "G" respectively.

248 Court adjourned until Friday morning, March 17th, '93.

PARIS, ILL., COURT-HOUSE, FRIDAY MORNING,
March 17th, 1893.

And the plaintiffs here rested their cause in rebuttal.

Defendant in Rebuttal.

And the defendant-, to further maintain the issues on their part, introduced the following evidence in rebuttal:

JAMES A. EADS, recalled, was examinee in chief by H. Van Sellars, and testified in rebuttal as follows:

Q. I will ask you if Mr. Pratt, in the conversation which you testified about, and also the conversation that he testified about before the contract was entered —, or about that time, told you that the Springer people or the people controlling the Springer patents were threatening him so as to shut him out of business, threatening him with suits.

Mr. RAUM: I object, because the question is leading and it is not in rebuttal, and the witness has already been interrogated as to that conversation in the evidence-in-chief.

The COURT: The rule is where one party goes on the stand and gives a version of a transaction and the other party comes on the stand and gives his version and states something that was not brought out in the previous conversation they may put the party back and ask him direct whether such things were said that came out in the last examination; that is the rule. Otherwise the one that got the last day would have the advantage. As I understand it, this is what the plaintiff testified to in addition to what
249 the defendant testified to when he was on the stand before.

Mr. RAUM: Well, the objection is this: This witness undertook to state what he understood to be the conversation there; then Mr. Pratt undertood to state what he resollected to be the conversa

tion; now, if there is any contradiction between them, the evidence shows it; that is already in.

What I object to is recalling this witness to that sort of matter in rebuttal.

The COURT: As I said before, the rule is where—say like in this case: Mr. Eads goes on the stand and gives his version of the transaction, and then the plaintiffs goes on and gives his version of it, and says there is something additional said in that conversation as to what was stated in Mr. Eads' first conversation. Mr. Eads may go back and they may ask him direct whether that additional, what the plaintiff said, was said; that is the rule.

Objections overruled; to which ruling of the court counsel for the plaintiffs took exceptions.

A. He did not; there was nothing of that kind said.

Q. I will ask you, Mr. Eads, this further question: Whether in the conversation about giving a bond Mr. Pratt stated to you that he wouldn't give a bond to involve any of his friends.

A. He did not.

Mr. RAUM: We object to that.

WITNESS: Well, excuse me.

Mr. RAUM: We object for the same reason.

The COURT: That is, what you claim was stated by the plaintiff?

250 Mr. RAUM: We object, also, because this witness has testified in the examination-in-chief; because he don't remember anything about that conversation which took place between himself and Mr. Pratt in the court-house square.

Objections overruled and exceptions taken.

A. Well, I wish to say he never told me that.

Q. What did you say that he did not tell you?

A. I suppose they don't want me to tell that.

Cross-examination by D. F. RAUM:

Q. Where was that conversation that preceded the contract at?

A. It was in my office.

Q. How long did it continue; how long was the conversation?

A. Oh, I couldn't tell you; probably fifteen or twenty minutes; half an hour, maybe. I don't know how long the conversation was.

Q. Was it at the time the contract was made?

A. That is, preceding it; immediately preceding it. On reflection of the matter, I think Mr. Pratt wrote the contract, and the contract was concluded right at that time. I think probably that is correct.

Q. Was it at your office or the gas office?

A. No; it was at my office.

Q. You think now the contract was written right there and then by Mr. Pratt?

A. I rather think that is the fact about it.

251 Z. E. POWELL, recalled, was *in* examined in chief by H. Van Sellars, and testified in rebuttal as follows:

Q. I will ask you if Mr. Pratt, in the conversation which you testified about, and also the conversation that he testified about before the contract was entered —, or about that time, told you that the Springer people or the people that controlled the Springer patents were threatening him so as to shut him out of the business, threatening him with suits.

Counsel for the plaintiff- makes same objections. Objections overruled and exceptions taken.

A. He did not.

Cross-examination by D. F. RAUM:

Q. How long did this conversation between Mr. Pratt and Mr. Eads, when you were present there at the time the contract was made, take?

A. When the contract was made?

Q. Yes.

A. Well, I was with Mr. Pratt nearly all the time. I was at different places.

Q. How long?

A. I don't know how long; it wasn't to exceed an hour, I don't suppose. I don't know.

Q. Has the gas company an office?

A. No; they have their office at the works.

Q. Mr. Eads' office is uptown?

A. Yes, sir.

252 And the defendants in rebuttal here rested their cause.

Testimony closed.

And the foregoing is all the evidence introduced in the above cause.

253 PLAINTIFFS' EXHIBIT A.

For Plaintiffs' Exhibit B, see page 40 of this Record.

"PLAINTIFFS' EXHIBIT A."

Paris Gas Light and Coke Company.

PARIS, ILLINOIS, *Jan. 8th*, 1889.

This contract and agreement made and entered into this eighth day of January, one thousand eight hundred and eighty-nine, by and between the Paris Gas Light and Coke Company, party of the first part and of Paris, Edgar county, State of Illinois, and Henry Pratt & Co. of Chicago, county of Cook, State of Illinois, party of the second part, witnesseth,

That the said party of the second part do by these presents cove-

nant and agree with the said party of the first part that in consideration of a sum hereinafter named that the party of the second part will at their own proper cost and expense do all of the work and furnish all of the material for the etection and completion of a water-gas apparatus erected and operated in accordance with patents granted to Pratt & Ryan Apr. 22nd, 1884 and Apr. 12th, 1887, together with any improvements which the said party of the second part may have to consist of the following apparatus, to wit: one set of double gas generators, two hydraulic seals, one vaporizor, one pressure gauge, one test-light purifier can, one tubular boiler 3 x 10 feet, one full fire front, one set grate bars, one safety valve, one feed-water injector, one combination water gauge, one steam gauge, one blow-off cock, one back arch, all set up and ready for brick-work, one No. 4 Sturtevant steel pressure-blower, one four-horse-power upright engine, one tubular condenser 3 x 12 f/et, one feed oil tank to hold not less than 100 gals. the above work to be set up and connected with all steam, oil, and vapor pipes to make the
254 same complete, ready for making gas together with the right to use the above-named patents or improvements at the works of the said party of the first part at Paris, in above-named county and State for the sum of four thousand eight hundred and fifty dollars to be paid in the following manner to wit to pay freight on material delivered (to be deducted from final payment) to be paid in thirty days after the completion of said work and the same has been tested to the satisfaction of the said party of the first part. The said party of the second part further agreed to save and keep the said party of the first part harmless against any suits — might be brought against it for infringements of other patents and if any suit *suit* is brought we will defend the same at our expense. And the said party of the second part further agreed to complete the said work on or before the first day of March, 1889, and if the said party of the second part fail to complete the same on or before the said first day of March, the said party of the second part will forfeit and pay to the said party of the first part the sum of ten dollars per day for each and every day until the said work shall be completed said sum to be deducted out of any money which may be due the said party of the second part.

PARIS GAS LIGHT AND COKE CO.,
By Z. E. POWELL, *Pres't.*
HENRY PRATT & CO.,
Pas H. PRATT.

"PLAINTIFFS' EXHIBIT B."

Paris Gas Light and Coke Company.

PARIS, ILLINOIS, *Apr. 3rd*, 1889.

255 "PLAINTIFFS' EXHIBIT B."

Paris Gas Light & Coke Co.

Henry Pratt & Co., 875 So. Halstead St.

DEAR SIRS: We wired you today to send us the top half excen
triz strap and rod for our engine. The rod shows it was abou
half broken off before it was finally broken, and how it could hav
been broken is a mystery to us.

What are the National Gas Light & Fuel Co. doing? They ar
sending us threatening letters, &c. Let us hear from you on thi
matter. Our works are doing very well outside the above break.

Truly, Z. E. POWELL.

T. G. SPRINGER.

Process and Apparatus for the Manufacture of Gas.

No. 196,495. Patented Oct. 23, 1877.

No. 310
Patented
Coal Gas
Lights & Coke
p 256

Fig. 1.

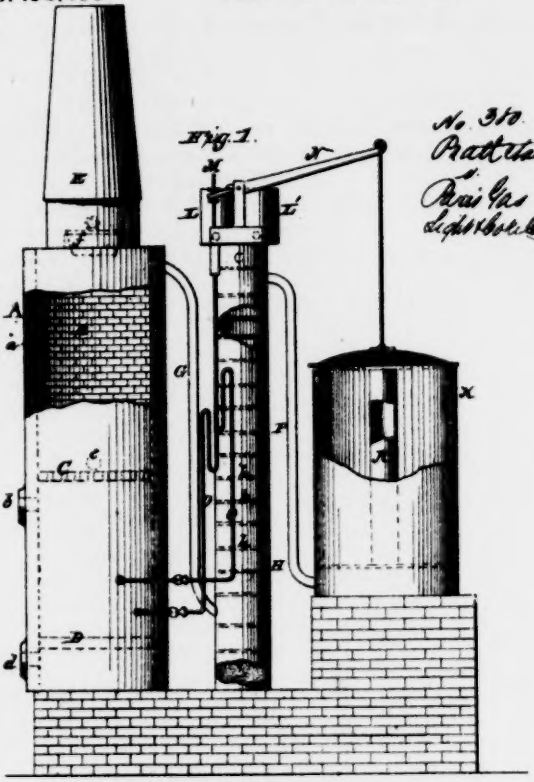


Fig 2.

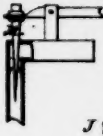
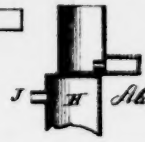


Fig 3



WITNESSES

Maurice L. Amaud

Van Gelt

INVENTOR

Theodore G. Springer

Edmonds & Dickerson

ATTORNEYS.

257 PLAINTIFFS' EXHIBIT C.

UNITED STATES PATENT OFFICE.

THEODORE G. SPRINGER, of Louisville, Kentucky.

Improvement in Processes and Apparatus for the Manufacture of Gas.

Specification forming part of Letters Patent No. 196,495, dated October 23, 1877; application filed August 2, 1877.

To all whom it may concern:

Be it known that I, Theo. G. Springer, of Louisville, in the county of Jefferson and in the State of Kentucky, have invented certain new and useful improvements in process and apparatus for the manufacture of gas; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of an automatic machine for producing a fixed gas from petroleum, or its products, and water; and, also, storing away in the day-time a sufficient amount of heat to generate what gas is consumed through the night, as will be hereinafter more fully set forth.

(Here follows diagram marked p. 256.)

In the annexed drawing, figure 1 is a side elevation, partly in section, of my machine. Figs. 2 and 3 are detail views of parts thereof.

In all the old processes the gas is generated during the day-time by keeping the retorts constantly at work, storing away the gas generated in a large gas-holder and consuming it at night, which requires a very large receiver to hold the gas, and this is very expensive, and requires a great deal of room.

In my process of storing away the heat in the day-time, and making the gas at night just as it is used, I do not require more than one-fifteenth part the room or one-twentieth part the expense in the construction of my works to make the same amount of gas as by the old process. Besides, I am enabled to put in works for a single block of buildings in a city, which would not be practical by the old process, on account of room and the smell attending the storing of the gas.

By my process I can construct works in each block in a city, and as I require no holder to store the gas in, and no main pipes larger than four inches, I am enabled to light a town for one-half the cost of laying mains by the old process.

The generator A is made of boiler-iron, tightly riveted together. The inside is lined with fire-bricks B, so arranged as to leave a dead-air space, *a*, of about three inches between the lining and the

outside shell. This generator stands perpendicular, and has a perforated diaphragm, C, about the center, above which the generator is filled with some refractory porous substance. Directly below the division C is a door, *b*, tightly fitted to admit coal, and about fourteen inches above the lower end of the generator is a grate, D, to receive the coal. Below this grate is another door, *d*, fitted as above, which serves to give air in heating the generator, and to remove the ashes. A little above the division C is a pipe, *e*, as shown.

In the top of the generator is an opening, having a valve, *f*, and also a stack or pipe, E, which serves as a chimney to increase the draft. The stack or pipe E, when the machine is being operated, will be provided with a chain and pulleys, so as easily to raise or lower the same.

G is a pipe, which conducts the gas from the generator A B to the washer and cooler H, and should be provided with a stop-cock.

The washer and cooler H is provided with a series of perforated diaphragms or divisions, *h*, and at the lower end it is to be provided with a siphon-pipe, to allow the water to flow off without admitting any gas to follow.

The upper end of the cooler is provided with a pipe, J, to admit a flow of water regulated by a cock. This cock can be automatically operated by the rise and fall of the governor K, so as to admit of just the quantity of water necessary to cool the amount of gas being made.

On top of the cooler are two tanks, L and L′, to contain, respectively, water and naphtha or petroleum. These tanks are provided with a cock or device, M, operated by a lever, N, from the governor, for automatically discharging the exact quantity of petroleum or naphtha and water as is required to make the amount of gas being consumed.

O O are the pipes connecting the tanks with the generator, said pipes being provided with suitable stop-cocks. P is the pipe which carries the gas from the cooler to the governor. R is the connection from the governor to the pipes where the gas is to be consumed.

The machine being set up ready to operate, a fire is made in the lower part of the generator on the grate D, and, after being
258 fairly started, coal is put into the generator through the door *b*, filling the generator nearly up to said door, when the door is closed. When the coal becomes well heated and burning nicely, an air-blast is turned on through the pipe *e* into the lower part of the upper chamber of the generator, which ignites the products of combustion, and in a short time the generator is at a very high degree of heat, and is ready to make gas.

The generator being heated by internal combustion every foot of surface that is heated can be used to generate gas. When the proper degree of heat is attained the air blast is turned off, the lower door *d* closed, the stack raised, and the valve *f* fitted down gas-tight. Then by opening the cocks in the pipes G and O O, the naphtha and water flow into the lower part of the generator, and are in-

stantly converted into carbonic-oxide gas and carbureted hydrogen, and force their way through the pipe G into the washer H, passing up through the perforated divisions, meeting the water which is flowing into the washer, and the gas is thereby thoroughly washed and cooled. From the washer the gas is forced through the pipe P into the governor, which instantly begins to rise and operates on the device for admitting and closing off the water and naphtha, and only allows enough to enter the generator to supply the amount of lights being used.

Two generators may be used to one machine, if desired, in which case the generators can be much smaller, and one may be fired up while the other one is working off its heat.

The generator will be heavily covered with some non-conducting material to prevent the radiation of the heat.

Having thus fully described my invention, what I claim as new, and desire to secure by letters patent, is—

1. The process of making a fixed illuminating-gas by feeding hydrocarbon liquid and water automatically, in proportion as the gas is consumed, into an incandescent body of coal in the combustion-chamber of the generator, and forcing the gas and vapors there generated through a heat-absorber, for making a fixed gas, as set forth.

2. In combination with a gas-holder and an automatic regulator, a gas-generator consisting of an exterior shell and interior lining, with air-space between them, and a perforated division or diaphragm inside the lining, forming a heat absorber above and a combustion-chamber below the division, whereby the heat may be stored during the day-time, for use in the manufacture of illuminating-gas at night, in the proportion as such gas is being consumed, as set forth.

3. The generator consisting of the outer shell A, inner brick lining B, and space *a* between them, and provided with the doors *b d*, perforated diaphragm C, grate D, air-pipe *e*, valve *f*, and stack E, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of July, 1877.

THEODORE G. SPRINGER.

Witnesses:

FRANK GALT.

HENRY N. MILLER.

261 PLAINTIFFS' EXHIBIT D.

UNITED STATES PATENT OFFICE.

ARTHUR O. GRANGER and JOSEPH H. COLLINS, JR., of Philadelphia, Pa.

Process of and Apparatus for Manufacturing Illuminating-gas.

Specification forming part of Letters Patent No. 234,400, dated November 16, 1880. Application filed April 12, 1880. (No model.)

To all whom it may concern:

Be it known that we, Arthur O. Granger and Joseph H. Collins, Jr., both of the city and county of Philadelphia and State of Pennsylvania, have invented an improvement in processes and apparatus for manufacturing illuminating-gas, of which the following is a specification.

Our improvements relate to that process and apparatus which are employed in the production of what is technically known as "water-gas;" and it consists in the operation and novel construction of various parts of the same, and which improvements are fully and clearly described in the following specification, shown in the accompanying drawings, and referred to in the appended claims.

The process of producing gas from steam, incandescent carbon, and fluid hydrocarbon, broadly, is old, and many forms of apparatus for producing such gas are also old; but our invention relates to many improvements upon such old forms, whereby the apparatus is under more perfect control, can be built at a less expense, and the gas made more economically and purer in composition.

There are many forms of apparatus for producing water-gas and carbureting it, some of which are shown in patents to Frost, Strong, and Hunter; but we do not claim anything set forth in those patents. Neither do we claim the processes set forth in those patents.

(Here follow diagrams marked pp. 259 & 260.)

In the drawings, figure 1 is a vertical section of the entire works. Fig. 2 is a section of the generator-blast-pipe nozzle. Fig. 3 is a cross-section of the superheater. Fig. 4 is a sectional plan of the washer. Fig. 5 is a sectional elevation of one of the pressure-gages. Fig. 6 is a section of the steam-valve which admits steam to the generator. Fig. 7 is a plan of the steam-valve operating and regulating mechanism. Fig. 8 is a sectional perspective view, showing the method of supporting the grate-bars.

Corresponding letters of reference indicate like parts of the apparatus.

A is the generator, B the superheater, and C the washer. The

(No Model.) 2 Sheets—Sheet 1.

A. O. GRANGER & J. H. COLLINS, Jr.

Process and Apparatus for Manufacturing Illuminating Gas.

No. 234,400. Patented Nov. 16, 1880.

No. 380. Pratt Ehd. v. Paul Gas Light & Coke Co. p. 259.

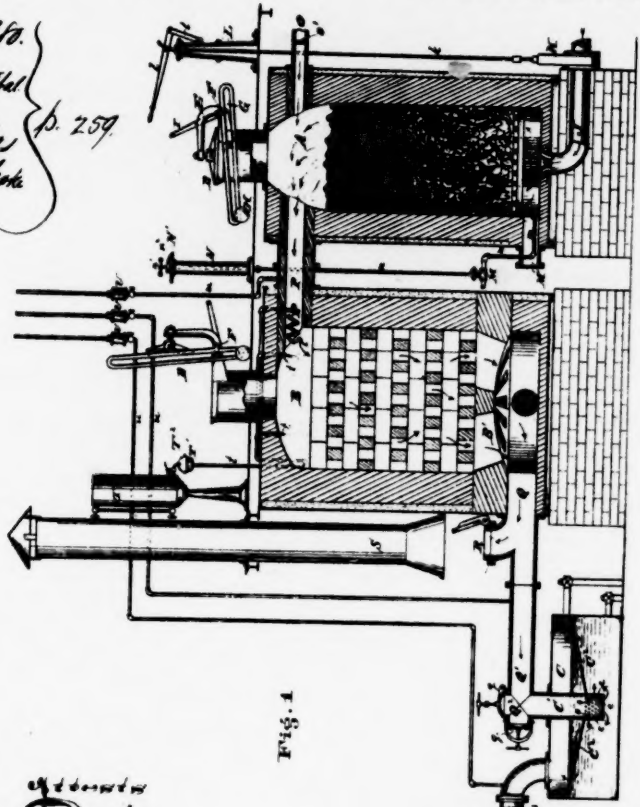


Fig. 1.

Witnesses
Chas. Jr.
R. S. Chilton

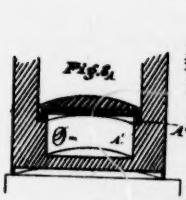
Inventors
Arthur O. Granger
and Joseph H. Collins Jr.
By their atty

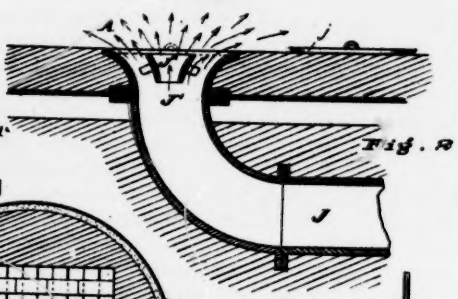
(No Model.) 2 Sheets—Sheet 1.

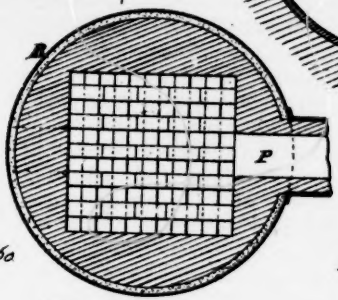
A. O. GRANGER & J. H. COLLINS, Jr.

Process and Apparatus for Manufacturing Illuminating Gas.

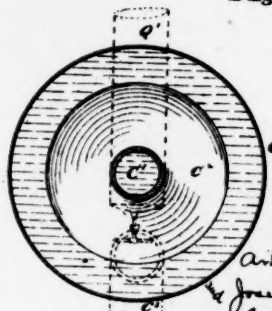
No. 234,400. Patented Nov. 16, 1880.







No. 380.
Matt Mod.
N. Paul Gas Light & Coke Co.
p. 260.



Witnesses:
R. L. Chisholm

Inventors:
Arthur O. Granger
& Joseph H. Collins Jr.
By their atty
Thos. Hunter

generator and also the superheater are provided at their respective tops with valves D, free to rotate upon a stem, which is bolted to an arm, E, secured to a rocking shaft, F, carrying upon either end the inclined guide G and arm I, respectively, and working in bearings attached to the valve-seat. Free to slide upon the guide G is a weight, H, which in practice is preferably suspended upon a small wheel or roller. To open the valve D the arm I is pulled back, changing the incline of the guide G, whereupon the weight H runs to the opposite side of the rocking shaft F and helps to raise the valve D by gravity, and at the time when the lever or arm I has the least power.

The generator is furnished with grate-bars and an air-tight door, which extends above and below such grate-bars. The grate-bars are supported upon a wrought-iron ring, A^2, which, in turn, is supported by fire-brick A′, which constitutes the narrowing of the generator at the bottom. This is clearly shown in Fig. 8. Formerly this iron ring was supported upon an expensive iron carriage, and it was impossible to clean the ash-pit; but with our construction there is not the slightest trouble in any way.

Entering the ash-pit under the grate-bars is the blast-nozzle J, of peculiar construction. Heretofore it has been customary to blow the air through a horizontal pipe under the grate-bars, as would be indicated by tube M′; but in that case the air was forced across the ash-pit against the wall on the opposite side, expending its force and supplying more oxygen to the fire at that side than anywhere else, which was a decided objection, inasmuch as coal burned unevenly, packed and caked on one side, and allowing the steam greater chance to escape without decomposition. With the old method the lower portions of the bed of coal were reduced to ashes before the coal on top was red hot, this latter being necessary in order to vaporize the fluid hydrocarbon, and frequently the superheater was hot enough, but the generator-coal not being red hot on top, time was lost in bringing it up to that condition, and the lower portions of coal were wasted away, whereas in our method the condition of the coal on top is of no great importance, as we vaporize the oil either in the top of the superheater or in the vaporizer in the connecting-flue; and by reason of the bed of coal being brought
262 to the incandescent state quicker with our method of blast the coal remains more solid, and so holds a larger quantity of heat than when by a slower combustion it is partially reduced to ashes. We will, however, with our method, more perfectly decompose the steam, and as a result we will have for the same amount of coal and steam a larger volume of gas and produced in a shorter space of time. By bringing the blast-pipe under the generator grate-bars in the middle, and then providing such pipes with the bell-mouths J′ and a smaller one, J^2, within the former, the air is forced up and spread evenly, and with equal force, all over the grate-surface, producing even combustion and lessening the chances of the steam being undecomposed. When cleaning the generator-fire a plate or cover, *j*, is placed over the nozzle to prevent its being choked up with ashes and cinders. This last pipe J is provided

with a valve, K, which is worked by the lever *l* upon the working-platform at the top. This lever *l* is hinged to a hollow standard, L, by link *l'*, and is connected to the valve K by the rod *k*. Opening into the generator under the grate-bars is a tube, M', which contains the end of the steam-pipe *m*. We particularly require that the nozzle of the steam-pipe *m* shall be directed up toward the grate-bars, because if the steam is blown upon the red-hot carbon it is instantly decomposed and gas immediately produced. Heretofore it has been the habit to blow the steam into the horizontal blast-pipe at the bottom and then allow it to find its way into the generator, and in which case much of it was condensed by contact with the cold pipe and fire-brick, &c., about the bottom of the generator, and no gas is produced until about four minutes have passed from the beginning of the steam admittance, whereas with our construction little or no steam is condensed and gas is instantly produced. Should the nozzle of this pipe *m* be worn the cap to the tube M' can be taken off and the end changed.

The steam-pipe *m* is provided with a valve, M, of peculiar construction. This valve has its valve-stem provided with a screw-thread, *m'*, of such a pitch that one complete revolution entirely opens the valve. This is very important, inasmuch as it is necessary to know how much steam is admitted to the generator for conversion into gas. To operate this valve we provide a hollow standard, N, upon the working-platform at the top, furnished with a disk, N', divided upon its upper surface and near its periphery into degrees or angles, Fig. 7. Passing up through this standard is a rod, *n*, which is in connection with the valve M and carrying just above the disk N' a pointer, n^2, and a handle, *n'*. By turning the handle and pointer at the top it is immediately known how wide the valve is open. Entering the top of the generator A, and above the level of the coal, is a blast-pipe, O, provided with the necessary valve, which is not shown. The object of this pipe O will be hereinafter explained.

Connecting the superheater B with the generator A is a fire-brick-lined tube, P. The superheater B is preferably, on account of cheap construction, cylindrical in shape outside, but is so lined that a square prismatic opening extends vertically through it to the arch at the bottom. The object of making this opening square or rectangular in shape is that the ordinary fire-brick can be used for the entire lining instead of the expensive specially-made curved bricks heretofore used. The arch B' at the bottom is horizontal on the top, whereby greater strength is obtained, and the loose brick above will have a level foundation.

It has been the practice heretofore to make the arches in superheaters curved both on top and bottom.

The bottom is provided with a cleaning-door. Opening from this superheater B, under the arch B', is an exit-flue, Q, which has two branches, one of which terminates in a valve, R, of similar construction to those already described. Situated over this valve R, but not in contact with it, is a smoke-stack, S. In general practice this valve was inclosed within the stack, and it was impossible to prevent the

valve from burning and warping by the intense heat it was of necessity subjected to, and the consequence was that when the valve was closed and the gas produced there was great loss from leakage. It was also very difficult to get at the valve to make repairs. By the construction shown all this is entirely obviated. A construction somewhat similar to this is shown in a patent to Rowland.

Pipe Q′ leads to the cross Q^2, which is used for cleaning purposes. It is composed of two hinged doors, *q q*, which are kept tightly closed by loops and screws, as shown in Fig. 1. Crosses with cleaning-doors have been used before. From this cross descends the tube C′ into the water contained in the washer C. The bottom of the tube C′ is closed, and is provided with small perforations, *c*. Surrounding the pipe or tube C′, just above the perforation *c*, extending out and inclined slightly upward, is the cylindrical plate C^2. By these means the gas is caused to descend below the water-level, and is thus finely divided up and brought into thorough contact with the water, whereby it is effectively washed. The washed gas escapes from the cylindrical washer by the tube C^3. A washer somewhat similar to this was patented to Miller; but we do not claim anything shown by him.

Situated above the superheater B is the oil-tank T, which is provided with a glass gage to indicate the quantity of oil contained therein. From this tank the oil is drawn into trough T′, from which it is allowed to drop into the superheater by pipes *t*, and becomes volatilized. It is best to introduce the fluid hydrocarbons in the superheater for the reason that they will flow more freely. In the old method of putting them in the top of the generator, dropping onto the coal, it is, during the first half of the run, very difficult, and, indeed, impossible, to get in the proper amount, because the large volume of hydrogen rushing up through the coal drives back the oil, and it is only during the last half of the run, when the fire is cooled off and the volume of hydrogen is much less, that the oil will flow freely, and it then has to be forced in in large quantities, so as to make the gas extremely rich, trusting to the rich gas of the latter part of the run or heat mixing or diffusing in the holder, and so producing a gas of average candle-power. In our method the oil is introduced in a chamber in which the current is downward, and so the proper amount can flow in during all parts of the run, and so saving the waste due to putting in an excess in the last part, as in the old way, and securing a gas of even candle-power from first to last. In our method the tendency is for the gas to draw the oil after it instead of stopping its flow, as in the old method. Over the top of the trough T′ is a glass case or covering, T^2, preventing any oil which may be evaporated from the said trough escaping into the atmosphere of the room, and which is so objectionable with the open troughs now in common use.

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If desired, the fluid hydrocarbons may be admitted into a coil or vaporizer, *p*, from which they issue as a vapor.

In connection with the foregoing apparatus we also provide pressure-gages U, which are shown in Fig. 5. They consist in a hollow cylinder, air-tight, provided at the top with glass tubes *n*′,

which extend nearly to the bottom inside, and at the bottom they are provided with a valve, w^3, and pipe u, in connection with pipes P, Q′, and C′. In connection with the pipe u is a small pipe, u^2, which extends nearly to the top of the gage inside. The gage is then nearly filled with water or other liquid, Fig. 5. From this construction it is evident that if any pressure occurs anywhere about the works it is instantly made apparent by the water being forced up the glass tubes.

It was formerly necessary to screw down the doors or valves D; but with our special construction they are sufficiently weighted, and in case of an explosion, which often occurs, they act as explosive doors. Before opening the door or valve D for the purpose of throwing coal into the generator, steam or blast, if either are open, are shut off from m and J, and air is blown through pipe O to blow out all explosive gases from the generator.

In the Lowe apparatus now in use the products of combustion pass from the generator at the top down a flue and enter the superheater at the bottom, where air is admitted to burn the gases to bring the superheater to a high temperature. By this it is readily seen that the gases produced in the generator were greatly cooled before they reached the superheater, and consequently about ten minutes elapse before the gases become sufficiently hot for combustion with the oxygen of the air-blast, and frequently a red-hot bar has to be inserted to ignite the gases, whereas with our construction the connection between the superheater and generator is made at the top and is short, and the air to burn the gases produced in the generator for the purpose of heating the superheater is admitted by the pipe O just at the point where there is the greatest amount of heat, and so instant combustion is assured and loss of time obviated. Also, the superheaters, as usually constructed, are small in diameter and very high, and the gases pass upward through them quickly and without much effect, whereas by our construction of a superheater of large diameter and of the same height as the generator, and causing the gases to descend, they spread over the entire interior and bring it to a high temperature in a very short space of time and do their greatest work.

The process of working is as follows: The valves M and I O being closed, air is forced in by the pipes J and O, bringing the coal to a state of incandescence and burning the escaping gases in the generator and above the coal. The flame and products from the combustion of these gases pass through the superheater, raising its temperature, and escape by valve R and chimney S. When the coal in generator A is brought to incandescence the blast from O and J is shut off and valve R closed and valve M opened, and the steam, preferably superheated, from the nozzle of steam-pipe m is instantly decomposed by the incandescent carbon, the resulting gases being hydrogen and carbonic oxide, which pass through flue P′ into the superheater, where they meet volatilized fluid hydrocarbons, which now drip from the pipe t. The gas so produced passes down through the superheater, where it becomes a fixed gas, and then through flues Q, Q′, and C′ into the water in the washer C, and

finally passes through pipe C^3 to the scrubbers and then to the holders.

Having now described our invention, what we claim, and desire to secure by letters patent, is—

1. The herein-described process for manufacturing illuminating-gas, consisting in the following steps: Raising to incandescence a bed of carbonaceous material by a blast of air in the primary generator, producing carbonic oxide; then burning this carbonic oxide by air above the bed of incandescent carbonaceous material and in the primary generator; then causing the products of combustion to pass into a superheater and descend under slight pressure, spreading into every available heating-space and raising said superheater to a high temperature; then decomposing steam by the incandescent carbonaceous material in the primary generator, producing water or heating gas; then carbureting such gas by fluid hydrocarbons in its passage from the primary generator to
264 the body of the superheater, and finally fixing the gas by passing it through the highly-heated superheater, substantially as and for the purpose specified.

2. The combination of the generator A, provided with blast-nozzle J J′, blast-pipe O, steam-pipe *m*, exit-flue P, with superheater B, provided at the top with hydrocarbon-tube *t* and at the bottom with outlet-flue Q, valve R, flue Q′, cross Q^2, and with washer C, provided with vertical tube C′, perforated at the bottom *c*, and a conical disk, C^2, substantially as and for the purpose specified.

3. The combination of generator A, blast-nozzle J J′, steam-pipe *m*, blast-pipe O, provided with a valve, O′, and exit-flue P, on the same level, and an automatic explosive door, D, constructed substantially as and for the purpose specified.

4. A charging and explosive valve composed of the following parts in combination: valve or disk D, attached to and supported by an arm, E, secured to a rock-shaft, F, provided on one end with an arm, I, and on the other with a guide, G, upon which a weight, H, is supported and free to move thereon, all being attached to and working upon a valve-seat, substantially as and for the purpose specified.

5. Generator A, provided with means to admit blast under the grate-bars, in combination with automatic explosive valve D, blast-pipe O, provided with valve O′ and exit-flue P on the same level and exactly opposite each other, substantially as and for the purpose specified.

6. Generator A, superheater B, both provided with automatic explosive valves or doors D, in combination with flue P, blast-pipe O on the same level, exit-flue Q, and hydrocarbon-pipe *t* at the top of the superheater and in front of the flue P, substantially as and for the purpose specified.

7. Superheater B, provided at the top with automatic explosive door D and flue P, and at the bottom with exit-flue Q, the cross-section of the superheater being circular outside and square inside, substantially as and for the purpose specified.

8. Generator A, in combination with blast-nozzle J J′, situated

under the middle of the grate-bars, blast-pipe O, flue P, square superheater B, exit-flue Q, and valve R, substantially as and for the purpose specified.

9. Blast-nozzle provided with a bell-mouth, J′, and containing within such bell-mouth a second or smaller bell-mouth, J″, for the purpose of spreading the air evenly over the grate-area, substantially as and for the purpose specified.

10. The blast-nozzle J, composed of two bell-mouths, one situated within the other, valve K, valve-rod *k*, lever *l*, link *l′*, and standard L, in combination with generator A, substantially as and for the purpose specified.

11. Oil-tank T, provided with a glass gage, in combination with glass trough T′, glass cover T², and tube *t*, substantially as and for the purpose specified.

In testimony of which invention we hereunto set our hands.

A. O. GRANGER.
JNO. H. COLLINS, JR.

Witnesses:

GEO. L. BAUM.
C. CUYLER GREGORY.

6875

(No Model.)

B. VAN STEENBERGH.

PROCESS OF AND APPARATUS FOR GENERATING WATER GAS.

No. 248,070. Patented Oct. 11, 1881.

Fig. 1.

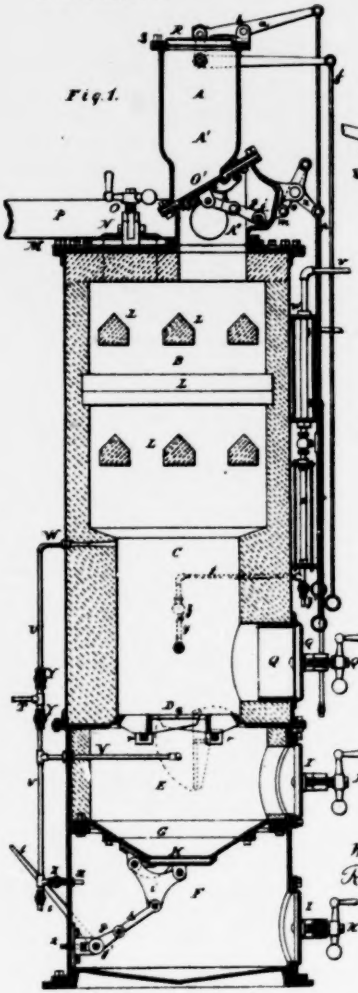


Fig. 3.

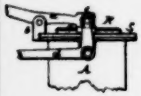
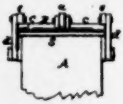
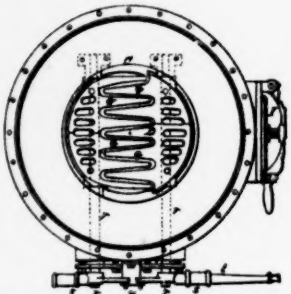


Fig. 4



No. 380.
Pratt Bro
&
Pain Gas
Lights & Coal
Co.
p. 265

Fig. 2.



Witnesses.
R. Bockee
C. C. Spaare

Inventor.
Burkhard Van Steenbergh

266 PLAINTIFFS' EXHIBIT E.

UNITED STATES PATENT OFFICE.

BURHAUS VAN STEENBERGH, of Goshen, New York.

Process of and Apparatus for Generating Water-gas.

Specification forming part of Letters Patent No. 248,070, dated October 11, 1881. Application filed February 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, Burhaus Van Steenbergh, of the town of Goshen, in the county of Orange and State of New York, have invented new and useful improvements in process of and apparatus for generating water-gas, of which the following is a specification.

In the water-gas generators now in use, in which the superheated steam and oleaginous matter are introduced into the incandescent fuel at all times in the same portions of said fuel, and in which a double-sealed hopper and ash-pit are used, the fuel, although gaining briskness at the upper portion or plate at which the gas is discharged, loses its life and decomposing property at the place where the steam is introduced very rapidly, so that generation of gas by the decomposition of steam soon becomes inactive, and almost entirely ceases before any new supply of fuel is desirable.

The invention relates, first, to the improved process for manufacturing gas, having for its object the correction of the above-mentioned defects; and to this end it consists in introducing the steam into the decomposing-chamber alternately above and below the body of incandescent carbonaceous decomposing material, and at the same time introducing the oleaginous matter centrally into such body of decomposing material, whereby the heat thereof is better maintained and decomposition better effected.

The invention relates, secondly, to the novel apparatus for carrying out the process, and consists in the devices and combinations of parts below described, and as particularly pointed out in the claims.

(Here follows diagram marked p. 265.)

In the annexed drawings, forming part of this specification, figure 1 represents a vertical central section of the generator with my improvements. Fig. 2 is a horizontal section of the same, taken at the level of the grate. Fig. 3 is a detached side view of the lock of the hopper-top seal. Fig. 4 is a front view of the same.

A represents the hopper of the generator; B, the fixing-chamber of the same. C is the incandescent-fuel chamber; D, the grate; E, the top chamber of the ash-pit, and F the bottom chamber of the same. Said chambers of the ash-pit are separated by the cone-bot-

tom G and the central bottom valve or seal H, pivoted to said bottom G.

The chambers E and F have each a screw-seal door, I, on the side of the chamber, for the delivery of ashes and to give access to their inside, and to close them properly tight each has a cross-bar guided in lugs and provided with a tightening-screw, K.

The grate D is arranged centrally at the bottom of the fuel-chamber C, and the fixing-chamber B is over the fuel-chamber. Both chambers are cased with iron outside and have a fire-brick lining. This lining of the fuel-chamber is made nearly twice as thick as that of the fixing-chamber, thereby allowing the gas to expand from the fuel into the fixing-chamber, the room in the latter being larger, by which means the generator is relieved of pressure. To cause a suitable superheating and fixing of the gas, the said fixing-chamber is furnished with several rows of tiles, L, arranged apart and across the chamber to intercept the passage of the gas. Said tiles, being highly heated or in an incandescent state, cause by their interception a suitable fixing of the gas. The top plate, M, of the generator is also lined with fire-brick, as shown. The hopper A is secured thereupon, and it is furnished with a lid, N, having a cross-bar and clamping-screw, O, and for both the hopper and said lid said plate has for each a proper opening through it.

The hopper is divided into the top compartment, A′, and the bottom compartment, A″, and a valve or seal, O′, is employed between them to close their communication during the time of feeding the top compartment, A′.

To the side of the hopper, below its valve or seal O′, is connected the gas-main P, by which the gas is taken from the generator to the wash-box, and thence passed through the scrubbers and purifier into the holder, in the usual way.

The gas-main P is preferably connected on the side of the hopper; but it may be on the top plate, and by it the gas is conducted from the retort to the wash-box.

The fuel-chamber is provided on the side with an opening having a valve or seal, Q, over it, to give access to the chamber close over the grate for taking out cinders and repairing the grate or lining.

Said valve Q is furnished with the usual cross-bar and clamp-
267 ing screw, Q′, guided on lugs provided on the seat of the valve.

The top of the hopper has the valve R, provided with a proper seat to close the said top air-tight.

The mechanism to operate both hopper-valves R and O′ and the valve H is provided with locking devices, so as to open and close them with a quick motion.

The hopper-valves have rods to operate them from below at the base of the generator.

The mechanism for operating the valve R consists of a two-armed lever, *a*, which is pivoted between the lugs *b*, cast to the valve-seat S. The short end of the lever *a* is loosely attached to the top of the valve R, and the long end of said lever has a rod suspended down to the base portion of the generator. By means of this lever *a* the

valve is readily raised or lowered from and to its seat from below at the base of the generator.

The mechanism consists, further, of a pair of arms, *c*, on the valve and two opposite locking-levers, *d d*, pivoted to the opposite sides of the hopper, and furnished each with a friction-roller, *e*, on its short vertical arm. The friction-rollers *e* overlap the arms *c*, of which each is made with an inclined plane for the roller to pass readily upon it and cause a powerful pressure for properly tightening the valve upon its seat and hold it locked. Each of said levers *d* has a long horizontal arm, on which a rod, *f*, is suspended to operate the lever from below at the base of the generator, all clearly shown in Figs. 1, 3, and 4.

The valves H and O′ are both loosely hinged to their seats to open downward. The mechanism for opening and closing them is constructed with toggle-joint devices, consisting of the crank *g* and link *h*, connected with a central pivot on the valve, and arranged so that the crank *g*, when located to its dead-center, will hold the valve in a closed position on its seat. The crank *g* in each is secured upon a horizontal arbor, *j*, which passes through the casing, and is furnished with a stuffing-box in the casing to keep a tight joint around said arbor.

The link *h* of the gear of the valve H is pivoted indirectly with the valve, having an intermediate arm, *i*, pivoted on the fulcrum of the valve, to transmit the motion of the crank *g*, and to provide against lost motion from wear or other cause the bearing of the arbor *j* close to the crank is made with an adjustable bearing-box and a set-screw, *k*, shown on the outside of the base of the generator from which it is turned. Said arbor *j* of this valve is furnished on its outside end with a suitable hand-lever, *l*, for operating the arbor, which is turned one-quarter of a revolution for completely opening or closing the valve H.

The arbor *j* of the valve O′ is furnished on its outer end with a secondary crank, *m*, and a two-armed lever, *n*, is connected with the crank *m* by means of the link *o* to one of the arms of said lever, to the second arm of which is suspended a rod, *p*, by which the valve is operated.

The grate D is constructed in two equal portions, each having a rock-shaft, *r*, to which it is connected, and which has its bearings in the metal case of the lower part or base of the generator. Each of said rock-shafts passes through the base of the generator, and is furnished with a stuffing-box at the outside to provide for a properly tight joint on the rock-shaft; and the semi portions of the grate are each made toward each other with tongues *q* projecting into the spaces of the other between its tongues, as shown, so that each of the semi portions may be turned to dump independently, and either may be operated for raking the coal independently, or they may be operated together. Each of the shafts *r* has on its outer end, secured firmly, a socket-arm, *s*, into which the shaking-bar *t* is applied; and to hold the grate stationary the said arm *s* has a flat projection, which passes in a slotted central standard, *u*, employed between said shafts, to which standard each of the arms *s*

is locked by a bolt inserted through the arm and standard. By means of having the grate constructed in semi portions, for each a fulcrum or rock-shaft, the raking of the coal is done with facility. To have the said shafts *r* properly connected in a powerful durable manner, each grate portion has hubs to fit over the shaft, with a square opening, and the shaft has its shank passing through said hubs also made square.

T represents the steam-pipe, which is supplied with superheated steam from a suitable superheater. It delivers the steam into the vertical steam-pipe U, which has two main branches, V and W, and a third branch, X; and said pipe U is furnished with a stop-valve, Y, for each of the branches V and W, and a stop-valve, Z, is applied on the branch X, which connects with the bottom chamber of the ash-pit.

By means of the steam-branch X and valve Z steam may be admitted into the bottom chamber for the purpose of expelling the air from it. When the grate is raked the ashes drop into the chamber E upon the valve H, which is closed during the raking of the grate. After the grates are raked the ashes are dropped into the chamber F by opening the valve H. The screw-seal I of the chamber F is always kept closed during this time; but after the ashes are dropped into the chamber F and the valve H is closed, the said screw-seal I is opened to remove the ashes from the retort entirely, and now, after the ashes are removed, the air having been admitted during the removal of the ashes is expelled by opening the valve Z and filling the chamber F with steam before closing said chamber with the seal I. Whenever the steam is passed into the said bottom chamber the seal of the same to the exterior is opened to allow the air to escape. The branch V connects with the
268 upper ash-pit chamber and delivers the steam under the grate into the fuel chamber. The branch W delivers the steam into the upper part of the fuel-chamber, and by means of the valves Y either of the branches V or W may be stopped and the other may be opened, or either may be used alternately.

The oil or naphtha is furnished from a suitable tank by means of the oil pipe *v*, which pipe passes through a heating-pipe or vaporizer, *w*; and from the heating-pipe *w* it connects with a glass tube, *x*, which connects with the central portion of the fuel chamber by means of a pipe, *y*, so that the oil or vapor thereof passes through the pipe *v* and vaporizer *w*, and becomes visible in passing through the glass tube *x*, from which it passes into the fuel-chamber.

The vaporizer *w* is constructed of a large tube, through which the oil-pipe *v* passes with tight joints around it, and the space between both tubes is connected with the steam-pipe from the boiler.

The pipe *y* is furnished with a stop-valve, *z*, for regulating the flow of the oil or vapor to carburet the hydrogen for giving it the proper illuminating properties. A drip and proof faucet, *z'*, is also employed on said pipe *y* to test the flow of the oil.

Frequently in generators of this class a pressure in the generating-retort stops the flow of the oil or its vapor, and it is on that account that measures for testing the flow of the vapor or oil are of impor-

tance to carry on a successful generation of the gas. By introducing the steam into the incandescent fuel at the same portion of the fuel for a continuous period the fuel loses its vitality or heat so rapidly that the generation becomes almost entirely inactive; the portion of the fuel at which the generated gas passes off gains activity or briskness. By means of introducing the steam alternately at either portion of the fuel the generation of the gas is continued for a great deal longer time in nearly full activity.

What I claim, and desire to secure by letters patent, is—

1. The process of manufacturing gas which consists in introducing oleaginous matter centrally within a body of incandescent corbonaceous material, and introducing steam into the decomposing-chamber alternately above and below such body of carbonaceous material, whereby the heat thereof is better maintained and decomposition is better effected, as specified.

2. In a gas-generator, the fuel-chamber C, in combination with steam-pipes V and W, having valves Y connected with the decomposing-chamber, substantially as described, and the oil-supply pipe *y*, entering the chamber C centrally, for the purpose specified.

3. In water-gas generators, the combination of the fuel-chamber C, the fixing-chamber B, the grate D, the tiles L, with the central oil nozzles or pipes, and the alternately-operating steam pipes, branches, and valves V, W, and Y, and the gas-main P, substantially as and for the purpose herein set forth.

4. The combination of the fuel-chamber C, and the fixing-chamber B and its tiles L, the grate D, the chambers E and F, with the steam-pipes V and W and valves Y, the seal or valve H, and the gas-main P, substantially as and for the purpose herein described and shown.

5. The combination of the fuel-chamber C, the grate D, the seals N and Q, and the chamber B and its tiles L, substantially as described.

6. The combination of the bottom chamber, F, with the steam-branch X and the valve H, the chamber E, the fuel-chamber C, and fixing-chamber B, substantially as and for the purpose herein mentioned.

7. The combination of the chambers B, C, E, and F with the valves H and O′, and the steam-pipes V and W and valves Y, the gas-main P, and hopper A, substantially as and for the purpose herein set forth.

8. The combination of the fuel-chamber C, the fixing-chamber B, and the hopper A, and the incandescent tiles L, the grate D, and the top and bottom chamber of the ash-pit, and the valves H and O′, with the oil-pipe *y*, and the steam-pipe U, and branches V and W, and their stop-valves Y, substantially as and for the purpose herein set forth.

9. The combination of the hopper A, having valves R and O′, the chambers B, C, E, and F, and the grate D, the valve H, and seals N, Q, and I, the gas-main P, the steam-pipes V and W, and valves Y, substantially as and for the purpose herein set forth.

10. The combination of the hopper A, with its chambers and

valves R and O′, and the fixing-chamber B and its tiles L, the fuel-chamber C, with its seal Q, its oil-pipe *y*, the steam-branches V and W, and stop-valves Y, the ash-pit chambers E and F, the steam-pipe U, and branch X, and grate D, substantially as and for the purpose herein mentioned.

11. The combination, in a water-gas generator, of the fuel-chamber C, the grate D, with its independent rock-shafts *r r*, their opposite tongues, and arranged to rake and dump, as described, with the chambers E and F, and the seals or lids I and Q, substantially as and for the purpose herein set forth.

12. The hopper-top valve R, with its arms *c c*, in combination with the locking-levers *d d* and the lever *a*, substantially as and for the purpose herein described.

In witness whereof I hereunto set my hand this 24th day of February, 1881.

BURHAUS VAN STEENBERGH.

In presence of—

R. BOEKLEN,
F. A. SPEARE.

269 PLAINTIFFS' EXHIBIT "F."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all to whom these presents may come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted to Henry Pratt and John J. Ryan April 22, 1884, number 297,162, for improvement in the process of generating gas.

In testimony whereof I, W. E. Simonds, Commissioner of Patents, have caused the seal of the Patent Office to be affixed [L. S.] this 15th day of September, in the year of our Lord one thousand eight hundred and ninety-two, and of the Independence of the United States the one hundred and seventeenth.

W. E. SIMONDS,
Commissioner.

No. 297,162.

THE UNITED STATES OF AMERICA:

To all to whom these presents shall come:

Whereas Henry Pratt and John J. Ryan, of Chicago, Illinois, have heretofore presented to the Commissioner of Patents a petition praying for the grant of letters patent for an alleged new and useful improvement in the process of generating gas, a description of which invention is contained in the specification, of which a copy is hereunto annexed and made a part hereof, and have complied with the various requirements of law in such case made and provided; and

270 Whereas, upon due examination made, the said claimants are adjudged to be entitled to a patent under the law:

Now, therefore, these letter patents are to grant unto the said Henry Pratt and John J. Ryan, their heirs or assigns, for the term of seventeen years from the twenty-second day of April, one thousand eight hundred and eighty-four, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of [L. S.] Washington, this twenty-second day of April, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and eighth.

M. L. JOSLYN,
Acting Secretary of the Interior.

Countersigned:

R. G. DYRENFORTH,
Acting Commissioner of Patents.

273 UNITED STATES PATENT OFFICE.

HENRY PRATT and JOHN J. RYAN, of Chicago, Illinois.

Process of Generating Gas.

Specification forming part of Letters Patent No. 297,162, dated April 22, 1884; application filed August 24, 1883. (No model.)

To all whom it may concern:

Be it known that we, Henry Pratt and John J. Ryan, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful improvements in processes of generating gas, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to an improved process of generating gas, as will be fully hereinafter described and claimed.

(Here follow diagrams marked pp. 271 & 272.)

Reference will be made to the accompanying drawings, in which figure 1 is an elevation of the apparatus employed, showing two furnaces provided with suitable connections; Fig. 2, a vertical section of one of such furnaces, and Fig. 3 a view in detail.

Like letters refer to like parts in each view.

A A′ represent two furnaces, composed of any suitable number of sheet-iron shells, and provided with any suitable lining formed of fire-brick, tile, or the like. Connection is formed between these furnaces by means of a pipe, B, which opens into each at a point below a perforated arch or fire-grate, C, with which each is provided. As will hereinafter appear, more than two of such furnaces may be employed, or only one, in which latter case the one furnace would be divided into two or more compartments, all having suitable pipe-connection, as B, herewith shown. Air-openings *a a′* are formed in each furnace through the shell, and having communication to the interior of the furnace through ports *b*, made through the fire-brick lining. One of these air-openings and one of the series of ports is situated below and the other above the fire-grate. Formed upon the top of each of the furnaces is a dome, D, covered by a hinged lid, *c*, and into each of which is tapped a gas-outlet pipe E. Tapped into said domes, and at points below the gas-outlets, is a steam or water supply pipe, *d*, through which water or steam is discharged upon the fire-bed on grate C. On one side of each of the furnaces, and at a point near the top thereof, are formed through the fire-brick lining two ports, *f f′*. Port *f* is horizontal, and *f′*, which is situated slightly below it, is curved and extends upward, so as to communicate therewith.

In the drawings, *g* represents a pipe, which is located in port *f*, above referred to, said pipe being provided with an opening, *h*, and

(No Model.)

2 Sheets—Sheet 1.

H. PRATT & J. J. RYAN.

PROCESS OF GENERATING GAS.

No. 297,162. Patented Apr. 22, 1884.

No. 380.
Pratt & Ryan
v.
Paris Gas
Light & Coke Co.
p. 271

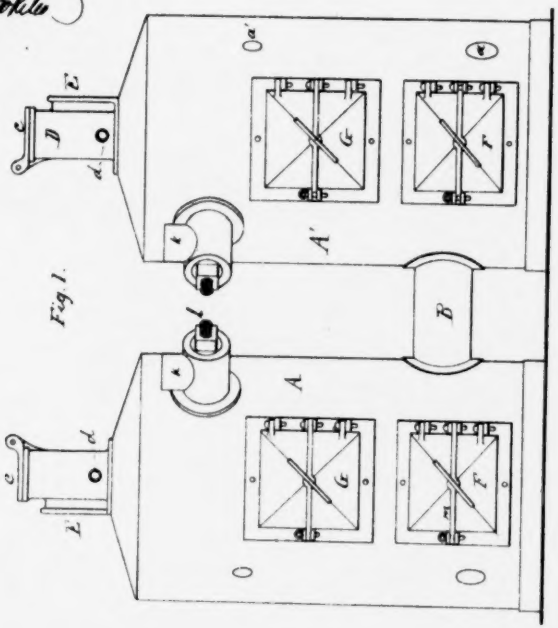


Fig. 1.

WITNESSES:

Adam Stowell

M. J. Chapell

INVENTOR

Henry Pratt
John J. Ryan

BY Wm. H. Betts

ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

H. PRATT & J. J. RYAN.

PROCESS OF GENERATING GAS.

No. 297,162. Patented Apr. 22, 1884.

Fig. 2.

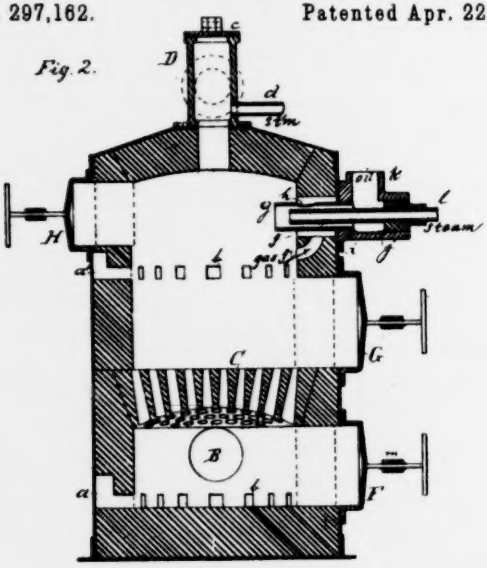
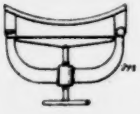


Fig. 3.



No. 330
Pratt et al.
Ry.
Rosin Gas
Light + Coke
&c.
} 6 272

WITNESSES:

Adam L. Robbins

M. L. Baggett

INVENTOR

Henry Pratt

John J. Ryan

BY Wm. H. Lotz

ATTORNEY

being secured at one end to flange *i*, formed upon the end of a pipe, *j*, which, as shown, is of larger diameter than the pipe *g*, and protrudes out beyond the shell of the furnace, the flange *i*, above referred to, abutting against the outer surface of said shell, and suitably secured, by screws or otherwise, to the shell. Pipe *j* is provided with a screw-threaded extension, *k*, into which is tapped a pipe for supplying naphtha or other suitable volatile hydrocarbons.

Situated within pipe *j*, and extending through the shell of the furnace to a point in pipe *g*, is a steam-supply pipe, *l*, the outer end of which protrudes beyond the outer end of pipe *j*, and is screw-threaded to receive the extension of the steam-supply.

F, G, and H represent suitable doors for obtaining access to different parts of the furnace, and *m* suitable arms for locking the same.

The operation is as follows: The grate is supplied with fuel, which is ignited, and air from any suitable blower is forced through the air-openings described until the fire reaches a sufficient degree of heat to decompose the steam to be applied thereto, the gases arising from the fire during this first step passing off through the dome D. The valves in the air-supply pipes are then shut off, the lids of domes D lowered, and the gas-outlet in one furnace closed. Steam or water is then discharged through the pipe *d* upon the fire-bed of the furnace, in which the gas-outlet is closed. As this steam or water is discharged upon the fire-bed the upper part of the fuel superheats it, and its temperature is gradually increased until it reaches the incandescent carbon at the bottom of the bed, when a portion of the steam is decomposed and forms the gases—viz., carbonic oxide, carbonic acid, and hydrogen. All the water vapors not decomposed in this fire pass with the gases through pipe B to the next furnace, where they are passed through the second fire-bed, where the remaining undecomposed steam is decomposed, and the carbonic acid takes on another atom of carbon and converts the whole into carbonic oxide and hydrogen. If the gas is de-
274 sired for illuminating purposes, steam is injected through pipe *l*, and naphtha or other volatile hydrocarbon through pipe *j*, and the gases in the furnace, rising, enter the ports *f f'*, where they commingle with this steam and naphtha, and are discharged again over the fire-bed, when they are formed into a fixed illuminating-gas.

We are aware that it is not new in the manufacture of gas to cause partial combustion of carbonaceous materials to generate a heating-gas, then to cause complete combustion of such gas, and to heat to incandescence a second bed of carbonaceous material by admitting air to the gas in its passage to the secondary generator, then to decompose steam by passing it through the incandescent carbonaceous material, and finally to carburet the resulting gases in the primary generator, and we do not claim any such process; and, further, we are aware of the existence of letters patent Nos. 248,439 and 263,499, issued to one J. Flannery, and disclaim all invention therein described.

Having thus described our invention, what we claim as new therein, and that for which we desire to secure letters patent, is—

The within-described process of manufacturing gas, which consists in superheating and decomposing steam by passing it down through incandescent or highly-heated fuel, then passing the resulting gases through a second body of heated fuel for converting any contained carbonic acid into carbonic oxide, then drawing the gases into an injector and commingling them with volatile hydrocarbons, and then discharging them over the fire-bed.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY PRATT.
JOHN J. RYAN.

Witnesses:

M. J. CLAGETT.
ADAM GEO. WHITE.

275 PLAINTIFFS' EXHIBIT "G."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office *and* of the letters patent granted Henry Pratt and John J. Ryan April 12, 1887, number 361,078, for improvement in gas-generators.

In testimony whereof I, W. E. Simonds, Commissioner of Patents, have caused the seal of the Patent Office to be affixed this [L. S.] 15th day of September, in the year of our Lord one thousand eight hundred and ninety-two, and of the Independence of the United States the one hundred and seventeenth.

W. E. SIMONDS,
Commissioner.

No. 361,078.

THE UNITED STATES OF AMERICA:

To all to whom these presents shall come:

Whereas Henry Pratt and John J. Ryan, of Chicago, Illinois have presented to the Commissioner of Patents a petition praying for the grant of letters patent for an alleged new and useful improvement in gas-generators, a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and have complied with the various requirements of law in such case made and provided; and

Whereas, upon due examination made, the said claimants are adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said Henry Pratt and John J. Ryan, their heirs or assigns, for the term of seventeen years from the 12th day of April, one thousand eight hundred and eighty-seven, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of [L. S.] Washington, this twelfth day of April, in the year of our Lord one thousand eight hundred and eighty-seven, and of the Independence of the United States of America the one hundred and eleventh.

D. L. HAWKINS,
Acting Secretary of the Interior.

Countersigned:

R. B. VANCE,
Acting Commissioner of Patents.

278 UNITED STATES PATENT OFFICE.

HENRY PRATT and JOHN J. RYAN, of Chicago, Illinois.

Gas-generator.

Specification forming part of Letters Patent No. 361,078, dated April 12, 1887. Application filed November 19, 1884. Serial No., 148,279. (No model.)

To all whom it may concern:

Be it known that we, Henry Pratt and John J. Ryan, citizens of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful improvements in gas-generators, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to improvements in furnaces for generating hydrocarbon gases for illuminating purposes, and more particularly to improvements on the furnaces shown in letters patent No. 297,162, granted to us on the 22d day of April, 1884.

The object of the invention is to provide improved means for feeding suitable volatile hydrocarbons to the gases generated in the furnace, as described in the letters patent named; and to that end it consists of a series of arches situated at different points above the fire-bed, and each provided with a series of radial ports communicating with the interior of the furnace through a number of small openings. Communication is also formed between the radial ports of each arch and a common supply-pipe, each arch being provided with a central opening, into which the radial ports open, and which is connected with the supply-pipe by a main channel. The supply-pipe is provided with a series of stop or regulating valves, through the medium of which it is determined which arch is to be used, as will be described.

(Here follow diagrams marked pp. 276 & 277.)

In the accompanying drawings, figure 1 is a vertical section of the furnace. Fig. 2 is an elevation thereof, and Figs. 3 and 4 a sectional plan and a cross-section of one of the arches.

Like letters refer to like parts in each view.

The manner of generating the heating-gas is the same as described in the letters patent referred to, there being two or more furnaces, A A′, suitably connected by a pipe, B, or one furnace subdivided. Air is admitted to bring the fire to a sufficient degree of heat to decompose the steam to be applied thereto, such steam passing down through one fire-bed, thence through the connecting-pipe, and up through the second fire-bed, the whole being thus converted into carbonic oxide and hydrogen. To convert the gas thus formed into an illuminating-gas it is necessary to mix therewith some volatile hydrocarbon—such as naphtha—and it is to the means employed to

(No Model.) 2 Sheets—Sheet 1.

H. PRATT & J. J. RYAN.

GAS GENERATOR.

No. 361,078. Patented Apr. 12, 1887.

Fig. 1.

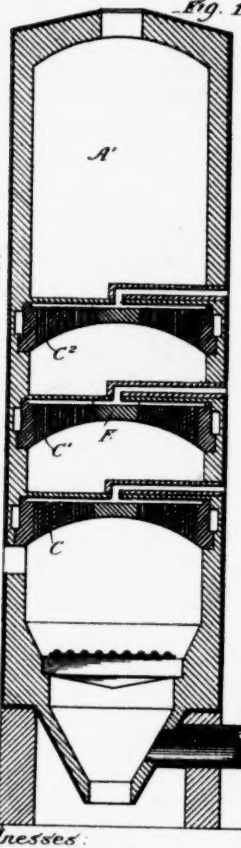
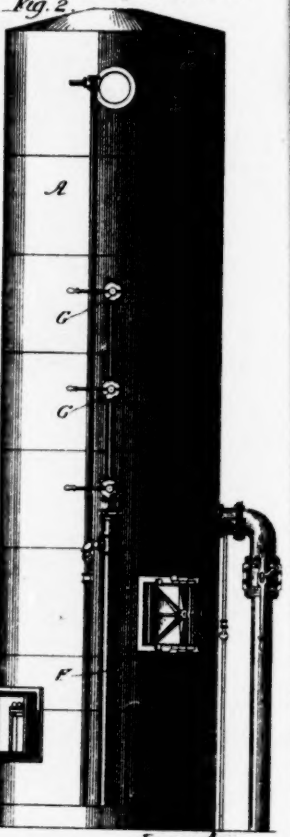


Fig. 2.



No. 380 Pratt & Ryan Gas Light & Coke Co. } 276

Witnesses:
Frank G. Blanchard
Louis Nolting

Inventor:
Henry Pratt
John J. Ryan
By Dewey & Co
Attorneys.

6885

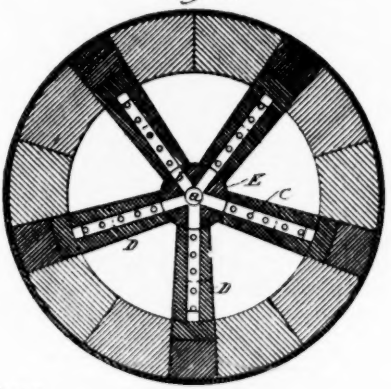
(No Model.) 2 Sheets—Sheet 2.

H. PRATT & J. J. RYAN.

GAS GENERATOR.

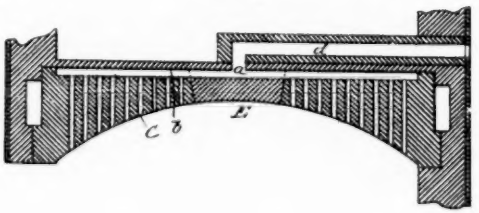
No. 361,078. Patented Apr. 12, 1887.

Fig. 3.



No. 360
Pratt et al
Patent
Gas
Lights + Lost Ba
277

Fig. 4.



Witnesses
Frank F. Blanchard
Louis Nolting

Inventor:
Henry Pratt
John J. Ryan
By Wm. A. Ely & Co.
Attorneys.

bring about this result in the most satisfactory manner to which this invention has special reference.

Situated within each furnace A A′, or in each compartment of a subdivided furnace, are a series of arches, C C′ C², &c., as many as desired. Each arch is spider-shaped—that is, each consists of a series of arms, D, radiating from a center, E. An opening or space, *a*, is formed in center E, with which a series of radiating ports, *b*, communicate, there being one of such ports for each arm D. Communication is formed between ports *b* and the interior of the furnace through the medium of small openings *c*, which pass downwardly through arms D. A main channel, *d*, communicates with the center E, and thence with the ports *b* and the interior of the furnace, there being one of such channels for each arch. At the outer end each channel *d* communicates with a supply-pipe, F, such pipe being provided with valves G, one for each arch.

It will be understood that owing to the relative position of the several arches with respect to the fire-bed such arches will be heated to different degrees, as also will the oils or resultant vapors passing therethrough. The object we have in view in the use of more than one arch is to avoid all danger of overheating the oil or vapors introduced therethrough. It has frequently been found in practice that where an arch has been properly located to prevent any lack of heat it is, under certain circumstances, overheated, owing to the height of the burning fuel and like causes, and we therefore provide the additional arches for use in such cases. It will be understood that any particular arch may be used, while the others are shut off by the proper manipulation of the valves G. In this manner, whenever the lower arch is for any reason too hot, the one next above may be used.

We are aware of the existence of letters patent No. 263,984, issued to one Springer, and letters patent No. 274,637, issued to one Moses, and disclaim any construction shown therein.

What we claim is—

279 & 280 1. The combination, in a cupola generator for the manufacture of illuminating-gas, and with the body and grate thereof, of a hollow perforated arch, said arch having openings therein to discharge into the combustion-chamber and being provided with a liquid-hydrocarbon-supply pipe.

2. The combination, in a cupola generator for the manufacture of illuminating-gas, and with the body thereof, of a hollow perforated diaphragm or arch, said diaphragm having openings therein to discharge into the combustion-chamber and being provided with a liquid-hydrocarbon-supply pipe, as described.

3. In a gas-generating furnace, the combination, with a cupola, its grate, and a volatile-hydrocarbon-supply pipe, of a series of hollow arches placed one above the other and each communicating with the interior of the furnace and with the supply-pipe, as described and shown.

4. In a gas-generating furnace, the combination, with a cupola, its grate, and a supply-pipe, of a series of spider arches, situated as described, each communicating with the supply-pipe and each pro-

vided with radial ports and openings for forming communication with the interior of the furnace, as set forth.

5. In a gas-generating furnace, the combination, with a cupola, its grate, and arches C C' C^2, &c., provided with ports *b*, openings *c*, and central space *a*, and channel *d*, of supply-pipe F and valves G, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY PRATT.
JOHN J. RYAN.

Witnesses:

M. J. CLAGETT.
FRANK S. BLANCHARD.

(Here follow diagrams marked pp. 281, 282, & 283.)

284 DEFENDANT'S EXHIBIT "C."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the reissue letters patent granted Theodore G. Springer February 7th, 1882, number 10032, for improvement in the process of and apparatus for the manufacture of gas.

In testimony whereof I, W. E. Simonds, Commissioner of Patents, have caused the seal of the Patent Office to be affixed [L. S.] this 15th day of September, in the year of our Lord one thousand eight hundred and ninety-two, and of the Independence of the United States the one hundred and seventeenth.

W. E. SIMONDS,
Commissioner.

Reissue.

No. 10032.

THE UNITED STATES OF AMERICA:

To all to whom these presents shall come:

Whereas Theodore G. Springer, of New York, New York, has presented to the Commissioner of Patents a petition praying for the reissue of letters patent for an alleged new and useful improvement in the process of and apparatus for the manufacture of gas, for which patent letters patent were issued to him, dated October 23rd, 1877, which letters patent have been surrendered, the same having been cancelled, and new letters ordered to issue to him
285 on an amended specification, a description of which invention is contained in the specification of which a copy is here-

FOLDOUT(S) IS/ARE TOO LARGE TO BE FILMED

unto annexed and made a part hereof, and has complied with the various requirements of law in such case made and provided; and

Whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said Theodore G. Springer, his heirs or assigns, for the term of seventeen years from the twenty-third day of October, one thousand eight hundred and seventy-seven, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of Washington, this seventh day of February, in the year of our Lord one thousand eight hundred and eighty-two, and of the Independence of the United States of America the one hundred and sixth.

A. BELL,
Acting Secretary of the Interior.

Countersigned:

E. M. MARBLE,
Commissioner of Patents.

287 UNITED STATES PATENT OFFICE.

THEODORE G. SPRINGER, of New York, N. Y.

Process of and Apparatus for the Manufacture of Gas.

Specification forming part of Reissued Letters Patent No. 10032, dated February 7, 1882. Original No. 196,495, dated October 23, 1877. Application for reissue filed January 10, 1882.

To all whom it may concern:

Be it known that I, Theo. G. Springer, of New York, in the county of New York, and in the State of New York, have invented certain new and useful improvements in processes of and apparatus for the manufacture of gas; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon, making a part of this specification.

This invention relates to certain improvements in processes and apparatus for the manufacture of gas; and it has for its objects to provide certain means whereby the heat necessary to decompose the gas-producing material may be stored up and utilized for the generation of gas in quantities as required for use, as more fully hereinafter specified.

Heretofore, in the manufacture of gas the gas-producing material, consisting of solid or liquid hydrocarbons, either alone or in conjunction with water, has been invariably subjected to decomposition in retorts or generators of limited capacity, and the gas as generated has been collected and stored in a suitable holder or holders. In order, however, to store a supply of gas at all adequate to the demands, especially in large cities, very large gas-holders or a series of holders are required, which are expensive and occupy a large amount of valuable room. In the present process, by storing up the heat and generating the gas as required for use, and in quantities only to supply the demand for the time being, such holders may be dispensed with entirely, or reduced in size to such an extent as to serve simply as regulators or governors, in which case they will occupy comparatively little room. Hence I am enabled to put in works for a single section of a city—say a block, for instance—which would not be practicable under the old process, owing to the room and smell attending the storing of the gas, and as the mains, where the works are distributed according to my invention, can be made much smaller than usual, it is evident that by my process and apparatus a city may be lighted at much less cost than by the old process. Again, it is well known that the gas-producing hydrocarbons can only be decomposed to produce a fixed gas at an elevated temperature, and it has heretofore been deemed necessary to employ retorts or generators of small capacity as the only practical means by which the gas-producing material could be subjected to a heat of the required intensity, and hence the necessity of storing up the gas for use, as it was impracticable under the old process to meet a

T. G. SPRINGER.

PROCESS OF AND APPARATUS FOR THE MANUFACTURE OF GAS.

No. 10,032. Reissued Feb. 7, 1882.

Fig. 1.

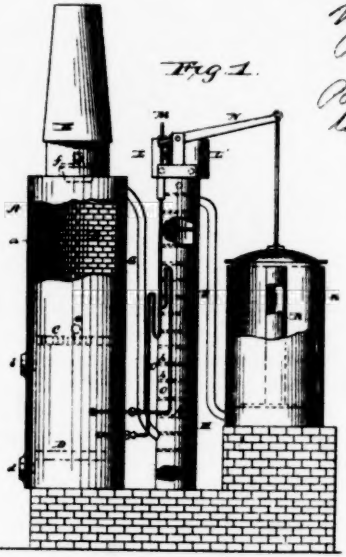


Fig. 2.

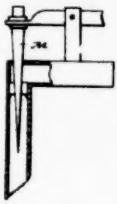
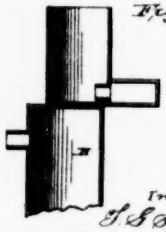


Fig. 3.



Witnesses.
Edwin L. Yewell
H. Aubrey Toulmin

Inventor
T. G. Springer.
By C. M. Alexander
his Attorney.

continuous demand for gas for any length of time by means of the small retorts or generators in use without large holders.

I have discovered that by constructing a generator of such capacity that a large amount of refractory material capable of absorbing and afterward giving off heat may be retained in mass in the generator such material may be heated to the proper temperature and the heat stored up for future or subsequent use in such manner that the gas may be continuously generated in quantities to supply any required demand. Moreover, I have discovered that the loss of heat by radiation diminishes rapidly as the capacity of the generator is increased, since the cubic capacity increases in geometrical proportion, while the superficial area or radiating surface increases in arithmetical proportion. For instance, in a rectangular generator of one cubic foot capacity the radiating-surface, which would consist almost wholly of the vertical sides of the generator, would be four square feet, while in a generator of ten times the superficial area—that is to say, forty square feet—the cubic capacity would be one hundred cubic feet. As the radiation is only at the outside of the generator, it is evident that by thus having a large body of material in mass a great saving of heat is effected, as the central portions of the mass radiate no heat whatever, and will retain the heat imparted to such portions a sufficient time to render it possible and practicable to store up the heat necessary for decomposing the gas-producing material effectually in quantities as demanded.

Another source of loss of heat heretofore experienced in cupola-generators, to which my invention is particularly applicable, has arisen from the fact that the generator, or "superheater," as it has sometimes been denominated, has always been made entirely separate from the combustion-chamber or furnace, causing loss by reason of the extended radiating-surface attendant upon such con-
288 struction. This objection I obviate by having the combustion-chamber and generator in one structure, as more fully hereinafter specified.

(Here follows diagram marked p. 286.)

In the annexed drawings, figure 1 is a side elevation, partly in section, of my apparatus, and Figs. 2 and 3 are detailed views of parts thereof.

The generator A is made of boiler-iron tightly riveted together. The inside is lined with fire-bricks B, so arranged as to leave a dead-air space, *a*, of about three inches between the lining and the outside shell. This generator stands perpendicular, and has a perforated diaphragm, C, about the center, above which the generator is filled with some refractory porus substance. Directly below the division C is a door, *b*, tightly fitted, to admit coal, and about fourteen inches above the lower end of the generator is a grate, D, to receive the coal. Below this grate is another door, *d*, fitted as above, which serves to admit air in heating the generator and to remove the ashes. A little above the division C is a pipe, *e*, as shown. In the top of the generator is an opening having a valve, *f*, and also a

stack or pipe, E, which serves as a chimney to increase the draft. The stack or pipe E, when the machine is being operated, will be provided with a chain and pulleys, so as to easily raise or lower the same.

G is a pipe which conducts the gas from the generator A B to the washer and cooler H, and should be provided with a stop-cock. The washer and cooler H is provided with a series of perforated diaphragms or divisions, *h*, and at the lower end it is to be provided with a siphon-pipe to allow the water to flow off without permitting any gas to follow. The upper end of the cooler is provided with a pipe, J, to admit a flow of water regulated by a cock. This cock can be automatically operated by the rise and fall of the governor K, so as to admit just the quantity of water to cool the amount of gas being made.

On top of the cooler are two tanks, L L′, to contain respectively water and naphtha or petroleum. These tanks are provided with a cock or device, M, operated by a lever, N, from the governor, for automatically discharging the exact quantity of petroleum or naphtha and water as is required to make the amount of gas being consumed.

O O are the pipes connecting the tanks with the generator, said pipes being provided with suitable stop-cocks.

P is the pipe which carries the gas from the cooler to the governor.

R is the connection from the governor to the pipes, where the gas is to be consumed.

The apparatus being set up ready to operate, a fire is made in the lower part of the cupola on the grate D, and after being fairly started coal is put into the generator through the door *b*, filling the generator nearly up to said door, when the door is closed. When the coal becomes well heated and is burning nicely an air-blast is turned on through the pipe *e* into the lower part of the upper chamber of the cupola, which ignites the products of combustion, and in a short time the apparatus is at a very high degree of heat and is ready to make gas. The cupola being heated by internal combustion, every foot of surface that is heated can be used to generate gas. When the proper degree of heat is attained the air-blast is turned off, the lower door, *d*, closed, the stack raised, and the valve *f* fitted down gas-tight. Then by opening the cocks in the pipes G and O O the naphtha and water flow into the lower part of the generator, and are instantly converted into carbonic-oxide gas and carbureted hydrogen, and force their way through the pipe G into the washer H, passing up through the perforated divisions, meeting the water which is flowing into the washer, and the gas is thereby thoroughly washed and cooled. From the washer the gas is forced through the pipe P into the governor, which instantly begins to rise and operates on the device for admitting and closing off the water and naphtha, and only allows enough to enter the generator to supply the amount of lights being used.

Two cupolas or generators may be used if desired, and one may be fired up while the other is working off its heat. The generator will be heavily covered with some non-conducting material to prevent radiation of heat.

Having thus described my invention, what I claim, and desire to secure by letters patent, is—

1. The herein-described process of manufacturing gas, the same consisting in the following steps, to wit: raising to incandescence a mass of carbonaceous material by a current of air, producing carbonic oxide; then burning the carbonic oxide by means of air above the bed of carbonaceous material and causing the products to pass into a mass of refractory material for highly heating the same; then decomposing water and naphtha by the incandescent carbonaceous material, producing water-gas; and finally fixing such gas by passing it through the mass of highly-heated refractory material, substantially as specified.

2. The method herein described of producing gas by storing up in a mass of refractory material the heat generated and carried off by the ignited gas evolved from the burning fuel while it is being prepared to decompose the liquid gas stock into mixed gases, and subsequently utilizing such heat by converting the mixed gases produced from liquid gas stock in contact with incandescent fuel into a fixed gas by passing such gases into and through the refractory material, substantially as described.

3. A cupola or gas-generating apparatus having a combustion and decomposing chamber for burning solid hydrocarbons, wherein water and hydrocarbon may be mutually decomposed, and a fixing-chamber partly or wholly filled with some refractory material for absorbing heat and converting the hot gases from the com-
289 bustion chamber into a fixed gas, the two chambers being formed in one structure, substantially as and for the purpose specified.

4. A cupola or gas-generating apparatus having a decomposing and combustion chamber, a perforated diaphragm at the top thereof, and a fixing-chamber containing refractory material above, and provided with an air-supply pipe for supplying air to support combustion of gases from the lower chamber for storing heat in the fixing-chamber, for the purpose specified.

5. The process of making a fixed illuminating-gas by feeding hydrocarbon liquid and water automatically, in proportion as the gas is consumed, into an incandescent body of coal in the combustion-chamber of the cupola or generator, and forcing the gas and water there generated through a heat-absorber for making a fixed gas, as set forth.

6. In combination with a gas-holder and an automatic regulator, a gas-generator consisting of an exterior shell and interior lining, with air-space between them, and a perforated division or diaphragm inside the lining, forming a heat-absorber above a combustion-chamber below the division, whereby the heat may be stored during the daytime for use in the manufacture of illuminating-gas at night in the proportion as such gas is being consumed, as set forth.

7. The generator consisting of the outer shell, A, inner brick lining, B, and space *a* between them, and provided with doors *b d*, perforated diaphragm C, grade D, air-pipe *e*, valve *f*, and stack E, all substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of January, 1882.

T. G. SPRINGER.

Witnesses:
C. A. NEALE.
J. J. McCARTHY.

290 DEFENDANT'S EXHIBIT "D."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Thaddeus S. C. Lowe September 21st, 1875, No. 167,847, for improvement in process of and apparatus for the manufacture of illuminating or heating gas.

In testimony whereof I, W. E. Simonds, Commissioner of Patents, have caused the seal of the Patent Office to be affixed this [L. S.] 15th day of September, in the year of our Lord one thousand eight hundred and ninety-two, and of the Independence of the United States the one hundred and seventeenth.

W. E. SIMONDS, *Commissioner.*

No. 167,847.

THE UNITED STATES OF AMERICA:

To all to whom these presents shall come:

Whereas Thaddeus S. C. Lowe, of Morristown, Pennsylvania, has presented to the Commissioner of Patents a petition praying for the grant of letters patent for an alleged new and useful improvement in processes of an- apparatus for the manufacture of illuminating or heating gas, a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and has complied with the various requirements of law in such case made and provided; and

291 Whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said Thaddeus S. C. Lowe, his heirs or assigns, for the term of seventeen years from the twenty-first day of September, one thousand eight hundred and seventy-five, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of [L. S.] Washington, this twenty-first day of September, in the year of our Lord one thousand eight hundred and seventy-five, and of the Independence of the United States the one hundredth.

B. R. COWEN,
Acting Secretary of the Interior.

Countersigned:
ELLIS SPEAR,
Acting Commissioner of Patents.

2 Sheets--Sheet 1.

T. S. C. LOWE.

Process and Apparatus for the Manufacture of Illuminating or Heating Gas.

No. 167,847. Patented Sept. 21, 1875.

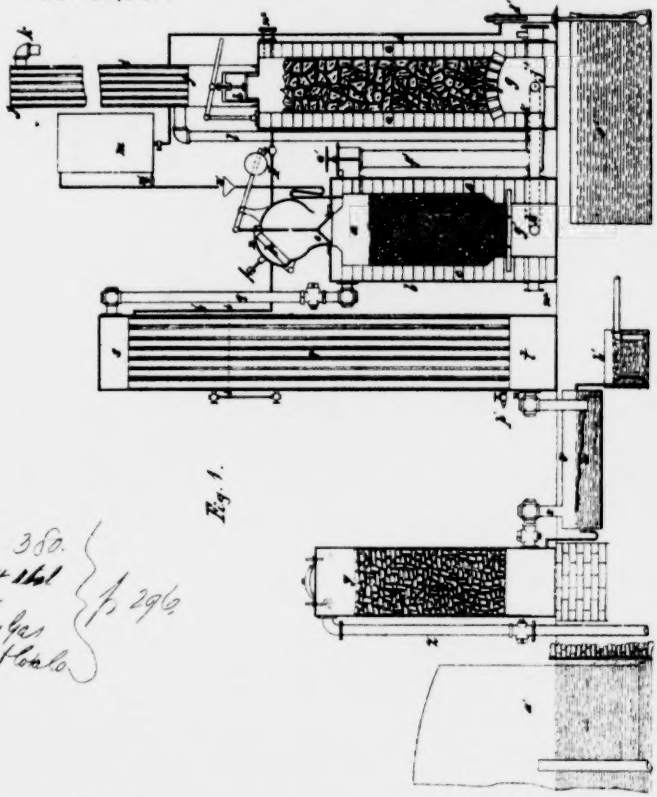


Fig 1.

No 380.
Pratt Hol
Coal Gas
Light & Coke
1,296

Witnesses

R. B. Sanderson

Thos. A. Burtt

Inventor

T. S. C. Lowe

689

2 Sheets--Sheet 2.

T. S. C. LOWE.

Process and Apparatus for the Manufacture of Illuminating or Heating Gas.

No. 167,847. Patented Sept. 21, 1875.

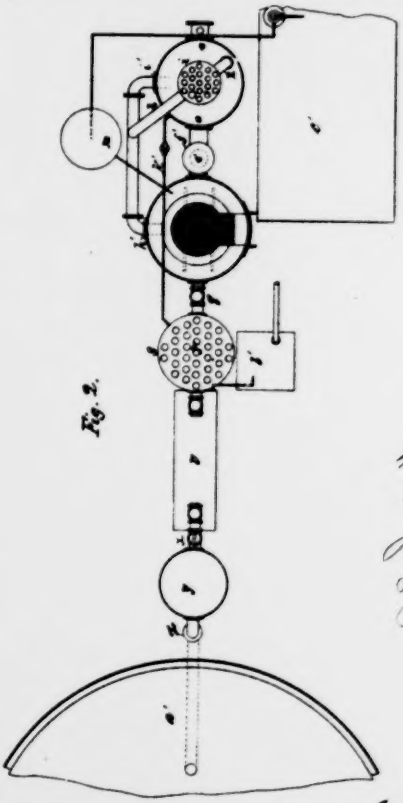


Fig. 2.

No 380
Pratt et al
Paris Gas
Light & Coke Co

Witnesses
P. B. Sanderson
Thos. A. Brutt.

Inventor
T. S. C. Lowe

292 UNITED STATES PATENT OFFICE.

THADDEUS S. C. LOWE, of Norristown, Pennsylvania.

Improvement in Processes of and Apparatus for the Manufacture of Illuminating or Heating Gas.

Specification forming part of Letters Patent No. 167,847, dated September 21, 1875; application filed March 10, 1875.

To all whom it may concern:

Be it known that I, Thaddeus S. C. Lowe, of Norristown, Montgomery county, Pennsylvania, have invented an improvement in processes of and apparatus for producing and using hydrocarbon and other gas for heating and illuminating purposes, and other purposes, of which the following is a specification:

(Here follow diagrams marked pp. 296 & 297.)

In the annexed drawings, which form a part of this specification, figure 1 represents a vertical section of the complete apparatus, and Fig. 2 a plan of the same.

a is the primary gas-generator, which consists of a casing, *b*, made of boiler-iron, or other suitable material, and lined with fire-bricks *c* or other suitable refractory materials. *d* is a superheater, for preparing steam for decomposition. This also consists of a casing of iron or other suitable material, lined with fire-bricks or other suitable refractory materials *e*, the inclosed space being filled with loosely-laid fire-bricks, or other suitable refractory materials, resting on a perforated arch, *f*, of like materials. At the bottom of the superheater *d* is a combustion-chamber, *g*. *h* is a tight-fitting valve, to be raised or lowered at pleasure. *i* is a heat-restorer, which forms the stack for carrying off the products of combustion. This consists of an ordinary iron stack of increased dimension, with heads *j* at top and bottom, in which heads are inserted ordinary boiler-tubes. *k* is a tube through which there is forced into the stack *i* atmospheric air, which circulates around the tubes in said stack, and issues out at the lower end of the stack in a heated condition, thence passing through tube *l* to support combustion in generator *a*, and in the combustion-chamber *g* of the superheater *d*. *m* is an elevated tank for holding petroleum or other hydrocarbon oils. The tank *m* is supported by a column, (not shown,) or in any convenient manner. *n* is a hopper, provided with a closely-fitting bell or cone valve, *o*, and also a closely-fitting lid, *p*. *q* is a tube for conveying gas from generator *a* to the boiler *r*, which is an upright tubular boiler, with chambers *s* and *t* at top and bottom, respectively. *u* is a tube for conveying gases from chamber *t* to the washer *v*. *w* is a diaphragm, forming an inclined plane in the washer *v*. This inclined plane should be rough or corrugated on its under side. *x* is a tube for conveying gases from washer *v*. *y* is an ordinary gas-

scrubber, filled with coke or other suitable materials. *z* is a tube for conveying gases into holder *a'*, or other points of storage, or directly to any place of consumption. *b'* is a well for catching condensed oils or tar, should any exist after leaving the generator. *c'* is a tank for holding petroleum or other hydrocarbon oils, and *d'* is a pump for forcing the same, as required, into the elevated tank *m*. *e'* is a closely-fitting valve, to be raised or lowered at pleasure for regulating the flow of carbonic oxide through the pipe *f'* into the combustion chamber *g*. The generator *a* is also provided with a closely-fitting door, (not shown in the drawing,) communicating with the ash-pit *g'*.

When it is desired to put this apparatus into operation, I build a fire on the grate bars in generator *a*, the valves *e'* and *h* being raised to allow of the free escape of the products of combustion through the open brick-work in superheater *d*, and up through the tubes in the heat-restoring stack *i*.

I now gradually introduce into generator *a* any desired solid carbonaceous substances, preferring either anthracite or bituminous coals, beside which, however, may be mentioned any kind of wood, all kinds of woody rubbish, finely-cut straw, coal-dust or slack, asphaltum, &c.

In the meantime a fan-blower or other suitable apparatus is caused to force air through the tube *k* into the heat-restorer *i*, from which a sufficient quantity of warmed or heated air is admitted through the tubes *l* and *h'*, to cause moderate combustion on the grate-bars of the gas-generator *a*. As the thickness of fuel increases in generator *a*, and while it is being brought into an incandescent state, the carbonic acid which is caused by the union of oxygen and carbon, at the bottom of the generator, while passing up through the thickness of incandescent fuel, becomes recarbonized, and is thus converted into carbonic oxide. This highly-inflammable gas, in union with the sulphur of the coal and other impu-
293 rities thrown off by the heat, leaves the generator *a* through the valve *s'*, and is discharged into the conbustion-chamber *g* through the opening *i'*. Air at the same time being admitted through tube *j'* into said chamber *g*, a flame ensues, producing an intense heat, the flame and hot products of combustion passing up through the openings in the arch *f*, and heating to bright redness the entire mass of inclosed open brick-work from bottom to top, the combustion-chamber *g* becoming white hot. In the meantime considerable heat, which ascends through the open tubes of the superheater *d*, being carried in the products of combustion, is absorbed by the air, which is forced in an opposite direction down the stack around the tubes, and is returned to the lower ends of the heated chambers *g* and *g'* for supporting combustion in the generator *a* and the superheater *d*, thus lessening the length of time and amount of fuel required to produce the necessary heat in the different chambers. After the mass of fuel, several feet in thickness, in the generator *a* has become thoroughly incandescent, the superheater *d* will also have become highly heated by the combustion of the (otherwise) waste gases passing from the generator *a*. I now shut off the air

from both chambers g and g' and close the valves e and h, and admit steam (preferably superheated) into the top of the superheater d through tube k' from boiler r. This steam, passing down through the highly-heated brick-work, becomes intensely heated, and is thus conveyed into ash-pit g', through opening h', where, coming in contact with carbon, also highly heated, the decomposition of the steam immediately takes place, liberating the hydrogen, and producing a proportionate quantity of carbonic acid. This latter gas, however, is immediately changed to carbonic oxide by recarbonization while passing up through the thick mass of incandescent fuel, the decomposition being materially aided by the high degree of heat acquired by the steam in the superheater.

At the same time that I thus admit steam into the superheater I also admit petroleum or other hydrocarbon oils in regulated quantities from tank m, through cock m', into funnel n', whence, passing in through a pipe, it drops directly onto the hot coals in generator a. Here the liquid hydrocarbon is immediately volatilized into a thick vapor, and at this point the highly-heated hydrogen, continually emerging from the top of the coals, instantly, and before having time to lose in heat, intermingles with and thoroughly permeates every particle of the volatile carbon, which has the effect, by this intense heat, to separate and so subdivide the particles of globules of carbon, and at the same time surround them so uniformly with the proper proportion of hydrogen that the particles of carbon, not being able to come in contact with each other, are rendered entirely non-condensable, as has been proven by numerous experiments and long practical experience. These mixed gases, in their highly-heated condition, are now continually being carried off through tube q and enter chamber s at the top end of boiler r, where they pass down through the numerous tubes contained in said boiler, and have the effect to superheat the steam in the upper part of the boiler, as well as to rapidly generate steam at o', below the water-line, and still farther down to heat the water as it is gradually pumped into the boiler through pipe p'. The gases, now considerably cooled, leave the tubes and enter chamber t, and thence, through tube u, into the wash-box v, where they pass under the inclined plane w, under water, in which any soot, dust, or other impurity is deposited. From the washer the gas next enters the lower end of scrubber y, and, after passing up through the contents thereof, is conveyed through the tube z' to holder a' or other points of storage, or directly to any place of consumption.

While generating gas, as above described, a test-burner will readily indicate the quality or candle-power of the gas being produced, and the requisite carbon or hydrogen can easily be regulated by regulating the quantity of oil admitted to the generator a or of steam to the superheater d.

After a time, and when a large quantity of gas has been produced and stored, the heat will be so much reduced in both the superheater d and the generator a that the steam will no longer decompose, (although both chambers will still retain a dull-red heat,) the non-decomposition of the steam being at once detected by the smokiness

of the flame at the test-burner, which, for want of hydrogen, gives a thick, dark-red smoky flame through an ordinary four or five feet burner. Such gas is known as "petroleum gas," and condenses rapidly in consequence of not being mixed with a proper proportion of hydrogen in the manner above described.

Whenever it is desired to restore the heat to the fuel in the generator *a* and the superheater *d*, the hydrocarbon oil and steam are both stopped off, and valves *e'* and *h* are opened, and atmospheric air is again forced into ash-pit *g'*, and combustion-chamber g^3, as before described, and now a few minutes' time suffices to bring both chambers to the required heat, after which a large amount of hydrocarbon gas is again produced as before.

When a steady flow of gas is desirable, (as in the cases where small holders are employed,) I employ two sets or more of generators, according to the requirements.

The gas from all the generators may be passed through and caused to generate steam in one boiler, *r*; so, also, one heat-restorer, *i*, can be made to carry off the hot products of combustion from all the generators and superheaters, and thus serve to heat the air
294 which is to support combustion in each, thus accomplishing the heating with much rapidity and economy, as above set forth.

The forms of apparatus which may be used in carrying out my above-described processes are various, and I have prepared many drawings of modified forms of apparatus for carrying out said process; but I prefer the form shown, it being in every respect simple and easy of management.

Instead of employing oil in the carbonizing process, as above described, other substances containing volatile carbon may be employed, such as rich bituminous coal, rosin, cotton-seed, ordinary coal-tar, asphaltum, fats of all kinds, residuum from oil refineries, &c. Care, however, should be taken when using any kind of solid carbon that the same is evenly spread on the top surface of the heated fuel or material in the generator *a*, in such a manner that the hot gases, while emerging from the top of said hot fuel, will come in contact with such solid or lumpy carbon, and thereby assist in its volatilization.

In case of using bituminous coal, it would be desirable to use some additional volatile carbon oil, to add to the hydrogen being generated from the steam.

If impure carbons are used for carbonizing the hydrogen, the usual purifiers will be necessary; but when petroleum and other pure carbons are employed, a purifier is not required.

In many cases it will be found advantageous to admit the steam (preferably highly heated) through pipe n^2 at the bottom of generator *a*, causing it to pass up through the incandescent coals and mingle with the carbon gas in the top of the generator, as before described, and then to pass the mixed mass through connecting-flue *f'* to the bottom of superheater *d*, and up through the mass of heated brick-work therein contained, and to be discharged through opening n^2 at the top of superheater *d*, from which opening the

gases may be conveyed to the washer *v*, either directly or after having been previously passed through the boiler *r*, for the purpose of utilizing its heat in the generation of steam, or after having been employed for superheating steam or air, or both.

The principal advantage gained by passing the mass of gases from generator *a* through the highly-heated fire-bricks in the superheater *d* is a more thorough decomposition of the elements which, having been passed up through the incandescent coal in the generator for too long a time, might contain considerable undecomposed vapor which would be converted into a fixed gas by being subjected to a higher heat, such as the superheater contains.

When it is desired to superheat the steam preparatory to its decomposition, and at the same time carry on the process of more permanently fixing the mixed gases evolved in the generator, it is necessary to use, in connection with the generator, two of the chambers described as superheater *d*—to wit, one for the superheating of the steam, and the other for the fixing of the gases, both chambers being similar in construction, and similarly arranged with respect to the generator, and similarly heated by direct internal combustion of a portion of the gases from generator *a*, and, in this case, the mixed gases from the generator, instead of being led off to and through the tubes of boiler *r*, as described, or, instead of being led off from the generator directly to the washer, are first passed through the additional chamber or superheater last above referred to.

The heat-restorer *i* may, instead of serving to heat the air-blast, as before described, be used as a boiler for generating steam, and may either remain in its present position or be set adjacent to the superheater, where the hot products of combustion may be conveyed to it in the proper manner.

In cases where gas extremely rich in carbon is desired, the same will be best produced by omitting the steam and generating the gas from oils alone, using the generator *a* either alone or in conjunction with the superheater.

I claim—

1. For the manufacture of illuminating and heating gas, the process which consists of dropping or otherwise admitting in limited quantities, continuously or intermittently, hydrocarbon oils or other carbonaceous substances, liquid or solid, onto the top of a thick mass of coal or other carbonaceous substance in a state of incandescence, in a close chamber previously heated by direct internal combustion, with or without the introduction of steam, and then, for the purpose of superheating and fixing the gases of said chamber, passing them from said chamber into and through a second chamber, which also has been previously heated by direct internal combustion, substantially as set forth.

2. The process for producing an illuminating-gas, which consists of superheating steam, by passing it through a chamber previously heated by direct internal combustion, then causing said steam to pass through a mass of coal or other carbonaceous substance, in a state of incandescence, in a close generating-chamber, to decompose

the steam, and afterward, for the purpose of still further heating the gases of said generating-chamber, and thereby producing a more fixed gas, passing the gases from said generating-chamber into and through another superheating-chamber, which has been previously heated by direct internal combustion, substantially as set forth.

3. The combination of the generator *a*, superheater *d*, the heat-restorer *i*, and means for forcing air through the pipe *k*, around the tubes of the heat-restorer *i*, through pipes *l*, *h'*, and *j'*, into the chamber *g*, for generating and securing intense combustion in said chamber *g*, substantially as set forth.

4. The combination of the generator *a*, superheater *d*, heat-restorer *i*, elevated oil-tank *m*, the upright tubular boiler *r*, with their several connecting-pipes and other appurtenant parts, as described, constituting apparatus for rapidly evolving illuminating-gas, and fixing the same in its gaseous condition, substantially as set forth.

5. The combination of the generator *a*, superheater *d*, heat-restorer *i*, elevated oil-tank *m*, upright tubular boiler *r*, wash-box *v*, scrubber *y*, with their several connecting-pipes and other appurtenant parts, as described, constituting apparatus for rapidly evolving illuminating and heating gas, fixing the same in its gaseous condition, and purifying the same preparatory to storage or immediate use, substantially as set forth.

T. S. C. LOWE.

Witnesses:
R. B. SANDERSON.
THOS. A. BURTT.

And the court, at the instance of the plaintiffs, instructed the jury as follows:

Given. 1. The jury is instructed that if they believe from the evidence that after the making of the written contract in evidence the plaintiffs or either of them agreed to execute and deliver to the defendant a bond of indemnity, as alleged in defendant's special pleas herein, yet unless they further find from a preponderance of the evidence that such subsequent agreement was based upon a valuable consideration or unless the original contract *by* procured by fraud, as alleged in said special pleas, then such subsequent agreement to give such bond of indemnity was void, and the failure to give such a bond constitutes no defense to this action.

Given. 2. The jury is instructed that while it is true as a matter of law that where a party is induced to enter into a contract by false and fraudulent representations such as constitute a fraud the compromise of such fraud would constitute a sufficient consideration to support a new promise or contract, yet, although they find from the evidence in this case that the plaintiffs or either of them did, prior to the execution of the contract in evidence in this case, make certain representations to the defendant and any such representations did afterwards prove untrue, if the representations which proved to be untrue were mere matters of opinion as to what would or might happen or exist in the future and were not in relation to

matters which had already happened or *was* then alleged to exist, then such representations proving untrue would not constitute a fraud and would not constitute any sufficient considerations
299 for a promise by the plaintiffs, if any such promise be given, to give an indemnity bond to defendant as is claimed in defendant's special pleas herein.

6. The jury is instructed that before a party can annul or treat a contract as void, by reason of alleged false or fraudulent representations used in procuring it to be made, it must appear from the evidence that the alleged false or fraudulent representations were made regarding something which had already happened or was then alleged to exist. No statement of one's opinion as to what will or will not happen or exist in the future can effect a contract or render it void. Every person in making a contract is at liberty to speculate or express opinions as to future events, and he cannot be held to answer for their truth or falsity.

8. The jury is instructed that fraud or misrepresentation will never be presumed, and the presumption of law is that men mean to be fair and honest in their dealings, and before any contract will be treated by a court as void for fraud or misrepresentation the party alleging such fraud or misrepresentation must prove the same, as alleged, by a preponderance of the evidence, and unless the jury believe from the evidence in this case that the plaintiffs made false or fraudulent representations to the defendant, and at the time of making such representations the plaintiffs knew the same to be false or fraudulent, and that such representations, if any such are proven, related to such matters and were of such character that, under the instructions in this case, the defendant had a right to rely upon the same, and the defendant did rely upon the same, and, relying upon the same, said defendant was thereby induced to and did enter
300 into the contract in controversy in this case, then the defendant has failed in its defense of fraud and misrepresentation, and upon such case you should find for the plaintiffs.

Given. (9.) The jury is instructed that the defendant has filed five pleas in this case; that the first one of these pleas is what is called the general issue, and the filing of that plea impose on the plaintiffs the necessity of proving the allegation of *his* declaration by a preponderance of the evidence in order to recover. The jury is also instructed that the 2nd, 3rd, 4th, and 5th pleas filed by the defendant are what are called special pleas, which set up affirmative facts by way of defense, and in order for the defendant to avail itself of any defense set up in said 2nd, 3rd, 4th, and 5th pleas or any of them the defendant must prove the allegations of fact of one or more of said special pleas by a preponderance of the evidence.

Given. (12.) The court instructs the jury that if they find from a preponderance of the evidence that the plaintiffs in this case fulfilled their part of the written contract introduced in evidence by erecting the water-gas apparatus for the defendant in all respects according to said contract, and if the jury further find that the special pleas filed herein are not sustained by the weight of the evidence, then the jury should find for the plaintiffs for the amount of

the contract price mentioned in said contract, less the amount of freight on the apparatus, and should add interest on the balance from the date of the completion of said works at the rate of six per cent. per annum until July 1st, 1891, and at five per cent. per annum from that date until this time.

301 Given. (13.) The jury is instructed that the defendant in this case sets up as a defense in one of its special pleas that the apparatus constructed by the plaintiffs under the written contract in evidence is an infringement of the Springer patent offered in evidence in this case and the Lowe patent offered in evidence in this case, and in order that the defendant may avail itself of such defense the burden of proof is upon the defendant to prove that the case is an infringement by a preponderance of the evidence.

Given. (14.) The jury is instructed that unless the Springer patent and the Lowe patent were subsisting, valid patents at and after the time of the erection of the apparatus by the plaintiffs under the written contract in evidence in this case that there could be no infringement thereof.

Given. (15.) The jury is instructed that before any person is entitled to a patent from the United States such person must have invented or discovered some new and useful art, machine, manufacture, or composition of matter or some new and useful improvement thereon not known or used by others in this country and not patented or described in any printed publication in this or any foreign country before his invention or description thereof and not in public use or on sale for more than two years prior to his application, and any patent which may be granted by the Patent Office where the above-mentioned requirements do not exist is null and void, and no suit for infringement can be maintained thereon.

302 Given. (16.) The jury is further instructed that a printed publication, within the meaning of the United States statutes relating to patents, is anything which is printed and, without any injunction of secrecy, is distributed to any part of the public in any country.

Given. (17.) The jury is instructed that although they may find from the evidence that there was a patent granted by the United States Patent Office to Theodore G. Springer, as alleged by defendant in its special plea, *yet* if they further find from the evidence that prior to that date of the application for such patent substantially the same matter as is described and claimed in such Springer patent was described in any printed publication in the United States or any foreign country, then such patent was issued without authority of law and was absolutely void, and no suit for infringement could be maintained thereon, and the defendant in this case cannot avail itself of such patent as any defense.

Given. (18.) The jury is further instructed that although they may believe from the evidence that patents were issued by the United States Patent Office to Theodore G. Springer and to T. S. C. Lowe, as is alleged in defendant's special plea, yet if they further believe from the evidence that the matters and things described in any of said patents *was* known and used by others in this country

prior to the date of the application for such patents, then such patents were issued without authority of law and were void, and no suit for infringement could be maintained thereon.

303 Given. (19.) The jury is further instructed that unless they believe from the evidence that Theodore G. Springer was the first, true, and original inventor of the things claimed in the patent issued to him, in evidence in this case, and that such things were not known and used by others in this country, then such patent was issued without authority of law and is void.

Given. (20.) The jury is further instructed that the patent offered in evidence, No. 10032, as issued to Theodore G. Springer, is what is known as a reissued patent—that is, Theodore G. Springer had previously had a patent and had surrendered the same and had obtained from the Patent Office this reissued patent upon the surrender of the other.

Given. (21.) The jury is further instructed that no patent can be reissued unless the original patent is inoperative or invalid by reason of a defective or insufficient specification or by reason of the patentee claiming as his own invention or discovery more than he had the right to claim as not true, the error having arisen by inadvertence, accident or mistake, and without any fraudulent or deceptive intention, and no new matter can be introduced into the specification.

Given. (22.) The jury is further instructed that, in order to entitle the patentee to a reissue of his patent, the original patent must have been invalid or inoperative.

304 Given. (23.) The jury is further instructed that any reissue patent must be for the same invention that the original patent embodied and was intended to secure, and in this case, if the jury find from the evidence that the reissued patent offered in evidence in this case to Springer was not for the same invention that the original patent embodied and was intended to secure, then such reissued patent is void, and no suit for infringement could be maintained thereon.

Given. (24.) The court instructs the jury that, if letters patent fully and carefully describe and claim a specific invention, complete in itself, so as not to be inoperative or invalid by reason of a defective or insufficiency, the reissue thereof cannot be had for the purpose of expanding and generalizing the claim in order to embrace and invention not specified in the original patent, and any reissued patent granted in any such case would be without authority of law and void, and no suit for infringement could be maintained thereon.

Given. (25.) The jury is further instructed that the right to obtain a reissue patent broadening and increasing the claim is lost by a lapse of time after the date of the original patent and before the application for the reissue, and if the jury find from the evidence in this case that the reissued patent to Springer, offered in evidence in this case, broadened and enlarged and increased the claims, and that more than four years elapsed after the issuing of the original patent and before the application for the reissue, then

the jury are instructed that such reissued patent was granted to Springer without authority of law and is void, and no suit for infringement could at any time be maintained thereon.

305 Given. (26.) The court instructs the jury that it is the practice in the United States circuit court that suits in chancery are commenced by the filing of a bill of complaint, and that it then becomes the duty of the clerk of the court to immediately issue a summons; that in the absence of proof to the contrary it will be presumed that an officer performs his duty, and that the certified copy of the summons introduced in evidence in this case was issued by the clerk of the United States circuit court at Indianapolis immediately upon the filing of the bill of complaint in that case.

The plaintiffs then moved the court, upon the evidence aforesaid, to instruct the jury as follows:

Refused. (3.) The jury is instructed that even though they believe from the evidence that the plaintiffs or one of them did, prior to the making of the written contract in evidence in this case, represent to the defendant that no other person or corporation claimed that the apparatus proposed to be constructed by plaintiffs for defendant under such contract or the use of such apparatus was an infringement of any patent, and that no suit would be brought against the defendant if it allowed the plaintiffs to erect the same and if it used such apparatus when erected, and even though they further find from the evidence that such representations afterwards proved untrue, yet you are instructed that the fact of such representations proving untrue, even though relied on by the defendant, did not constitute a fraud and would not render void the written contract in evidence in this case and would constitute no defense to this action.

306 Refused. (4.) The jury is instructed that even though they believe from the evidence in this case that during negotiations between the plaintiffs and defendant leading up to the making of the contract in controversy in this case the plaintiffs stated that no suit for infringement of patents would be brought against the defendant by any one on account of the use by defendant of the apparatus to be constructed under such contract by the plaintiffs, and even though they further believe from the evidence that the National Gas Light and Fuel Company did afterwards begin a suit against the defendant for infringement of patent rights on account of the use by defendant of the apparatus constructed by plaintiffs, yet such representation does not constitute a fraud or form any reason for annulling the contract between plaintiffs and defendant, and such representation was not one to be relied upon by the defendant and is not sufficient to justify a verdict for the defendant in this case.

Refused. (5.) The jury is instructed that where, in negotiations leading up to a contract, one party makes certain representations as to certain matters, and such representations are as much within the knowledge of the party to whom they are made as of the party making them, and in the very nature of things one party would know as much about it as the other, then the party to whom the representations are made has no right to rely upon the same, and

if the same should at some future time prove to be untrue, then they do not constitute fraud and constitute no reason for annulling any contract and would not be sufficient to justify a verdict for the defendant in this case.

307 Refused. (7.) The jury is instructed that if they find from a preponderance of the evidence in this case that the plaintiffs and defendant entered into the contract offered in evidence in this case, whereby the plaintiffs agreed to furnish and set up certain boilers, machinery, etc., and if they further find from a preponderance of the evidence that in pursuance of such contract the plaintiffs did furnish and set up the boilers, machinery, etc., called for by said contract, if any, and that the same *was* taken possession of by the defendant and used for a considerable space of time without objection to the same, and that defendant has never paid to plaintiffs the price mentioned in such contract, if any, then the plaintiffs are entitled to recover and you should return a verdict for the plaintiffs, unless you find from a preponderance of the evidence in this case that the defendant has proven by a preponderance of the evidence the facts alleged by said defendant in one or more of its special pleas—that is, in the 2nd, 3rd, and 4th pleas or one of them.

Refused. (10.) The jury is instructed that although they may believe from the evidence that during the negotiations between plaintiffs and defendant leading up to the making of the written contract in evidence in this case the plaintiffs or either of them did represent to the defendant that no suit for infringement of any patent would be brought against the defendant by any one on account of the use by the defendant of the apparatus to be constructed under such contract by the plaintiffs for defendant, and that no person or corporation claimed that such apparatus or the use thereof was an infringement of any patent, yet the jury are instructed

308 that the truth or falsity of such representations *were* as much within the knowledge of the defendant as of the plaintiffs. In such case the parties are on equal grounds and their own judgments must be their guide in coming to a conclusion, and such representation cannot constitute a fraud or avail the defendant as a defense in this case.

Refused. (11.) The jury is instructed that even though they believe from the evidence that the plaintiffs or either of them represented to the defendant prior to the making of the written contract in evidence that no person or corporation claimed that the apparatus to be constructed under such contract was an infringement of any patent, and that no suit for infringement of any patent would be brought against the defendant on account of the use by it of the apparatus to be constructed by the plaintiffs under said written contract, and that the defendant, believing such representations to be true and relying on the same, was thereby induced to and did execute the written contract in evidence in this case, in January, 1889, and even though they also find from the evidence that such representations were untrue, and that said defendant learned that the same were untrue about the time the work under said written contract was begun, and thereupon the defendant noti-

fied the plaintiffs they would have to stop work, and as a compromise of the matter the plaintiffs promised the defendant to give a bond of indemnity, as alleged in defendant's special pleas herein, and upon such promise the defendant permitted plaintiffs to proceed with the work, and that in April, 1889, the plaintiffs refused to give to defendant any indemnity bond, yet if they further
309 find from the evidence that in April, 1889, at the time the plaintiffs refused to give any indemnity bond, the defendant was using the apparatus constructed by the plaintiffs under said written contract, and that after such refusal of plaintiffs to give any indemnity bond the defendants continued to use such apparatus for the space of more than a year thereafter, then such use would constitute a waiver by the defendant of any fraud practiced on it in procuring the execution of such written contract and would be a release of any promise by the plaintiffs to give any indemnity bond, and would constitute no defense in this case.

Which instructions the court refused to give the jury; to which the plaintiffs then and there excepted, and the court, at the instance of the defendant, instructed the jury as follows:

Given. (1.) The court instructs the jury that, as a matter of law in this case, the defendant is required to set forth the defense in one or more written pleas, and in this case the 3, 4, and 5 pleas filed by the defendant herein, if proven by a preponderance of the evidence; and the jury are further instructed that if they believe from a preponderance of the evidence in the case that the defendant has proven the facts set forth in either its third, fourth, or fifth pleas, as set forth therein, by a preponderance of the evidence, then the jury should find for the defendant.

Given. (2.) If the jury believe from a preponderance of the evidence that there was a suit commenced by the National Gas Light and Fuel Company against the defendant and Z. E. Powell, president of the defendant company, in the circuit court of the
310 United States for the southern district of Illinois, in July, A. D. 1889, for an infringement of certain patents issued by the Commissioner of Patents of the United States of America to Theodore G. Springer, and for an injunction and damages against said defendant for the use of the water-gas apparatus sold by plaintiffs to defendant, and plaintiffs had notice of said suit, then it became and was the duty of plaintiffs to defend at their own expense said suit with due and reasonable diligence and have the same tried and determined as soon as they reasonably could do so; and if the jury believe from a preponderance of the evidence that said plaintiffs did not defend such suit (if they also find from the evidence that such suit has been brought against said defendant) in good faith and with reasonable diligence, then the defendant had a right to cease to use said water-gas apparatus and tender it back to the plaintiffs in a reasonable length of time; and if the jury find from a preponderance of the evidence that the said defendant did so tender back said water-gas apparatus to plaintiffs (if they find from a preponderance of the evidence that said plaintiffs have failed to defend said suit

with reasonable diligence), then the jury should find for the defendant.

Given. (3.) The court instructs the jury that if they believe from a preponderance of the evidence that the plaintiffs just before the execution of the contract offered in evidence and as an inducement to enter into said contract represented to said defendant that as a matter of fact that the National Gas Light and Fuel Company did not claim that the water-gas apparatus proposed to be sold by them to the defendant was an infringement on their patent, usually
311 called the Springer patent, and that said National Gas and Fuel Company had formerly claimed that said apparatus, so proposed to be sold to this defendant, was an infringement, but that they had abandoned such claim, and that said representations were false, and that plaintiffs knew at the time they made them that they were false, and that defendant relied upon said representations and entered into said contract because of said representations and statements and relying upon the same, then in that case defendant had a right to abandon said contract and tender back to sa-d plaintiffs said water-gas apparatus so sold to said defendant in a reasonable length of time after the discovery that said representation- were false, and that plaintiffs knew they were false when they made them.

Given. (4.) The court instructs the jury that, as a matter of law, there is an implied warranty of good title in the sale of personal property, and in this case if the jury believe from the evidence in the case that the plaintiffs sold to the defendant the water-gas apparatus and the right to use the same mentioned in the contract in evidence in this case, then, as a matter of law, there was an implied warranty that the plaintiffs then and there had a good title in such apparatus and the right to use the same, and that such good title and right to use the said apparatus was acquired by the defendant by said sale; and if the jury believe from a preponderance of the evidence in the case that at the time of such sale the defendant could not use said apparatus without infringing upon a patent then existing upon the said use of said apparatus, then there was a breach of the said warranty, and the defendant was entitled to re-
312 scind said sale and refuse to pay for the said apparatus and the said use thereof, and tender the said apparatus to the plaintiffs within a reasonable length of time.

To the giving of said instructions of the defendant the plaintiffs then and there excepted.

The defendant then moved the court upon the evidence aforesaid to instruct the jury as follows:

Refused. The court instructs the jury that if the defendant has proved by a preponderance of the evidence the facts and allegations set forth and alleged in its third plea filed herein in manner and form as therein set forth, then the jury should find for the defendant.

Refused. The court instructs the jury that if the jury believe from a preponderance of the evidence that the plaintiffs before entering into and making the contract offered in evidence falsely and

knowingly made false representations in regard to any material matter relating to said contract to induce the making of said contract, and that the defendant relied upon such false representations and made and entered into said contract by reason of such false and fraudulent representations and relying upon the same, then the defendant has the right to abandon said contract and tender back said water-gas apparatus to the said plaintiffs within a reasonable time after the discovery of such false representations.

Which instructions the court refused to give the jury; to which the defendant then and there excepted.

And the court instructed the jury as follows:

313 Given. The court instructs you that in deciding the issues in this case and in determining whether the evidence is equally balanced or whether the evidence preponderates in favor of either side in this case, and, if so, upon which side, you should carefully weigh and consider all of the facts and circumstances given in evidence upon the trial of this cause, and that you should carefully consider and weigh the testimony of each and every witness that has testified before you in this case, and that you should give the same such weight and such weight only as you believe them justly entitled to in view of all the evidence in this case.

Given. The court instructs you that in weighing the testimony of any witness who has testified before you upon the trial of this cause you have the right to take into consideration the capacity or want of capacity of such witness to know the facts about which he testifies; also the opportunity or want of opportunity of such witness to know such facts; also the diligence or want of diligence of such witness in observing such facts; also the recollection or want of recollection of such witness of such facts; also the interest or want of interest of such witness in the result of this suit; also the willingness or unwillingness of such witness to tell all that he knows about such facts and no more; also the reasonableness or unreasonableness of the story of such witness; also the demeanor of such witness in the court-room during the trial of this cause; also the appearance and manner of such witness while testifying in this suit before you; also the fact, if such be the fact, that such witness has been contradicted or corroborated by other credible evidence in the case; also the fact, if such be the fact, that such witness has made statements out of court in regard to the matter that he tes-

314 tified to differently from statements made by such witness while testifying in this case before you.

Given. The court instructs you that you should weigh and consider the evidence in this case as reasonable, careful, and fair-minded men, and that you should consider and weigh the evidence in this case in the light of good reason, sense, and sound judgment.

Given. The court instructs you that if you find a verdict for the plaintiffs the form of your verdict may be:

We, the jury, find for the plaintiffs and assess their damages at — (Here insert the amount of plaintiffs' damage in dollars or dollars and cents.)

Given. If you find a verdict for the defendant the form of your verdict may be:

We, the jury, find for the defendant.

To the giving of said instructions of the court the plaintiffs then and there excepted; and thereupon the said jury came into court with the following verdict:

"We, the jury, find for the defendant."

Whereupon the plaintiffs' counsel filed the following motion *of* a new trial:

STATE OF ILLINOIS, } *ss*:
Edgar County, }

Edgar Circuit Court, March Term, 1893.

315 HENRY PRATT *et al.* }
vs. } Assumpsit.
PARIS GAS LIGHT AND COKE CO. }

And now comes the plaintiffs, by their attorneys, and moves the court to set aside the verdict rendered and to grant a new trial in this cause.

And for grounds of said motion the plaintiffs show to the court the following, to wit:

1st. The court admitted on the trial improper evidence on the part of the defendant.

2nd. The court refused to admit proper evidence offered by the plaintiffs.

3rd. The court improperly refused to give to the jury the third, fourth, fifth, seventh, tenth, and eleventh instructions asked by the plaintiffs.

4th. The court improperly gave to the jury the first, second, third, and fourth instructions asked by the defendant.

5th. The verdict is contrary to the law and evidence in the case.

JOHN T. RICHARDS AND
DYAS AND VAN DYKE,
Plaintiffs' Attorneys.

But the court overruled the said motion and gave judgment upon the said verdict of the said jury against the plaintiffs; to which the plaintiffs then and there excepted; and inasmuch as the matters aforesaid do not appear of record, the counsel for the plaintiffs presents this bill of exceptions and prays that the same may be
316 signed and sealed by the court and made part of the record in said cause, and it is done accordingly.

(Signed) F. BOOKWALTER, *Judge.* [L. S.]

May 12, 1893.

Know all men by these presents that we, Henry Pratt and John J. Ryan, copartners as Henry Pratt & Co. (as principals), and John T. Richards, of the county of Cook, and Joseph E. Dyas, of the county

of Edgar and State of Illinois, are held and firmly bound unto the Paris Gas Light and Coke Company, of the county and State last aforesaid, in the penal sum of five hundred ($500) dollars, lawful money of the United States; for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly, severally, and firmly, by these presents.

Witness our hands and seals this 13th day of May, A. D. 1893.

The condition of the above obligation is such that whereas the said Paris Gas Light and Coke Company did, on the 13th day of April, A. D. 1893, in the circuit court of Edgar county, in the State aforesaid, and of the March term thereof, A. D. 1893, recover a judgment against the above-bounden Henry Pratt and John J. Ryan, copartners, etc., for the costs of suit, from which said judgment of the said circuit court of Edgar county the said Henry Pratt and John J. Ryan have prayed for and obtained an appeal to the appellate court in and for the third district of said State:

Now, therefore, if the said Henry Pratt and John J. Ryan shall duly prosecute their said appeal with effect, and moreover
317 pay the amount of the judgment, interest, damages, and costs rendered and to be rendered against them in case the said judgment shall be affirmed, the above obligation to be then void; otherwise to remain in full force and virtue.

HENRY PRATT. [SEAL.]
JOHN J. RYAN. [SEAL.]
JOHN T. RICHARDS. [SEAL.]
JOSEPH E. DYAS. [SEAL.]

Taken and approved by me at my office, in Paris, this 15th day of May, A. D. 1893.

JAMES L. VANCE, *Clerk.*

STATE OF ILLINOIS, } ss.:
Edgar County, }

Appellate Court of Illinois, Third District, May Term, 1893.

In the Circuit Court of Edgar County.

HENRY PRATT *et al.*
vs.
PARIS GAS LIGHT AND COKE COMPANY.

It is hereby stipulated and agreed by and between the parties to the above-entitled case that in making up the record and the transcript thereof uncertified printed copies of the drawings and specifications and of the letters patent offered in evidence on the trial of said cause may be substituted for the original patents and the certified copies of such patents and specifications.

It is further stipulated and agreed that the blue print showing the construction of the apparatus used by the defendant com-
318 pany, and also the drawing showing the shell of what is known as the "Springer patent," both of which were offered

in evidence by the defendants in said cause, may be attached to and made a part of the record in lieu of copies thereof.

JOHN T. RICHARDS,
J. E. DYAS,
Attorneys for Plaintiffs.
H. VAN SELLAR,
F. W. DUNDAS,
Attorneys for Defendants.

I, James L. Vance, clerk of the circuit court of Edgar county, in the State aforesaid, do hereby certify the above and foregoing to be a true, perfect, and complete copy of record and proceedings in a certain cause lately pending in said court, on the common-law side thereof, wherein Henry Pratt and John J. Ryan, partners as Henry Pratt & Co., were plaintiffs and Paris Gas Light and Coke Company was defendant.

In witness whereof I have hereunto set my hand and [SEAL.] affixed the seal of said court, at Paris, this 15th day of May, A. D. 1893.

JAS. L. VANCE, *Clerk.*

Assignment of Errors.

And now comes the said Henry Pratt and John J. Ryan, copartners as Henry Pratt & Co., appellants, by John T. Richards,
319 Joseph E. Dyas, and Daniel F. Raum, their attorneys, and say that there is a manifest error in the foregoing record and proceedings, and that the judgment of the circuit court of Edgar county should be reversed:

1st. Because the court admitted on the trial of said cause improper evidence on the part of the defendant.

2nd. Because the court refused to admit proper evidence offered by plaintiffs.

3rd. Because the court improperly refused the third, fourth, seventh, tenth, and eleventh instructions asked by the plaintiffs.

4th. Because the court gave improper instructions on behalf of the defendant.

5th. Because the verdict and judgment are contrary to law and the evidence in the case.

6th. Because the said circuit court of Edgar county had no jurisdiction to try the issues raised by the pleadings in said cause.

7th. Because the court erred in overruling plaintiffs' motion for a new trial.

JOHN T. RICHARDS,
JOSEPH E. DYAS,
DANIEL F. RAUM,
Attorneys for Appellants.

320 I, Geo. W. Jones, clerk of the appellate court for the third district of the State of Illinois, do hereby certify that the foregoing is a complete record in a certain case wherein Henry Pratt

et al. were appellants and Paris Gas Light and Coke Co. was appellee as the same was filed in my office on the 24th day of May, A. D. 1893.

In testimony whereof I have hereunto set my hand and the seal of said appellate court, at Springfield, this 20th day of December, A. D. 1893.

[SEAL.] GEORGE W. JONES,
Clerk Appellate Court, Third District.

321 STATE OF ILLINOIS:

Appellate Court, Third District, May Term, A. D. 1893.

At an appellate court for said district, State of Illinois, begun and held at Springfield, in said State, on the 16th day of May, 1893, the same being the third Tuesday in said month of May, 1893, said term of court being held according to law.

Present: Hon. Carroll C. Boggs, presiding justice; Hon. Geo. W. Wall, justice; Hon. Geo. W. Pleasants, justice; Geo. W. Jones, clerk; Patrick Murray, sheriff.

Court opened by proclamation.

Attest: GEO. W. JONES, *Clerk.*

Be it remembered that, to wit, on the 24th day of May, A. D. 1893, there was filed in the office of the clerk of said appellate court a certain transcript of record and proceedings had in the circuit court of Edgar county, State of Illinois, wherein Henry Pratt & John J. Ryan, partners as Henry Pratt & Co. — plaintiffs and Paris Gas Light & Coke Company — defendant. From the finding and judgment of said circuit court in said cause the said plaintiffs, Henry Pratt *et al.*, appealed to the appellate court, third district, Illinois, and brings here and files said transcript under sec. 72 of practice act, which is placed upon the docket of said appellate court, as follows, to wit:

322 HENRY PRATT & Co., Appellants,
vs.
PARIS GAS LIGHT AND COKE COMPANY, Appellee.
} No. 123. Appeal from Circuit Court of Edgar County, Illinois.

And be it further remembered that afterwards, to wit, on the 20th day of June, A. D. 1893, it being one of the days of said May term, A. D. 1893, of said appellate court, certain proceedings were had in said court and entered of record in words and figures following, to wit:

HENRY PRATT & Co., Appellants,
vs.
PARIS GAS LIGHT & COKE Co., Appellee.
} No. 123. Appeal from Edgar.

On this day come the said parties, by their attorneys, and this being one of the days set apart for the call of the docket under the rules and orders of the court for this term, and this cause coming

now on to be heard, the appellants having entered motion to reverse the judgment and remand said cause and for costs, and the appellee having entered motion to affirm the judgment herein and for costs and for *procedendo*, and said motions being taken under advisement for final hearing, and the clerk reporting to the court that said cause is now ready to be taken on the call of the docket,

323 it is ordered by the court that this cause be now submitted upon the record, abstracts, briefs, and arguments filed and to be filed herein under the rules or order of the court; and it is further ordered by the court that this cause be now taken under advisement for final hearing.

And be it further remembered that afterwards, to wit, on the 27th day of November, A. D. 1893, a judgment was rendered in said cause in said appellate court and entered of record in the words and figures following, to wit:

HENRY PRATT & JOHN J. RYAN, Partners as Henry Pratt & Co., Appellants, *vs.* PARIS GAS LIGHT AND COKE COMPANY, Appellee.	No. 123. Appeal from Edgar.

On this day come again the said parties, and the court having diligently examined and inspected as well the record and proceedings aforesaid as the matters and things therein assigned for error, and being now sufficiently advised of and concerning the premises, for that it appears to the court now here that neither in the record and proceedings aforesaid nor in the rendition of the judgment aforesaid is there anything erroneous, vicious, or defective, and that that record is no error, therefore it is considered by the court that the judgment aforesaid be affirmed in all things and stand in full force and effect, notwithstanding the said matters and things therein assigned for error; and it is further considered by the court that the said appellee recover of and from the said appellants costs by it in this behalf expended, and that it have execution therefor.

324 And afterwards, to wit, on the 12th day of December, A. D. 1893, comes the said appellants, by attorneys, and presents their petition in writing for an appeal from said judgment of affirmance in said cause so entered as aforesaid to the supreme court of the State of Illinois, together with an affidavit of the solvency and sufficiency of the sureties proposed on the appeal bond; which said petition and affidavit are in the words and figures following to wit:

STATE OF ILLINOIS:

Appellate Court, Third District, of the May Term, A. D. 1893.

HENRY PRATT and JOHN J. RYAN, Partners as Henry Pratt & Co., Appellants, *vs.* PARIS GAS LIGHT AND COKE COMPANY, Appellee. | No. 123. Appeal from Circuit Court of Edgar County.

Your petitioner-, Henry Pratt and John J. Ryan, partners as Henry Pratt & Co., by John T. Richards, Joseph E. Dyas, and Daniel F. Raum, their attorneys, pray an appeal in the above-entitled cause to the supreme court of said State of Illinois to the January term, A. D. 1894, and respectfully shows that on the 28th day of November, A. D. 1893, this court, by the order of that date, affirmed the judgment of the said circuit court of Edgar county, Illinois, wherein judgment was rendered in favor of said Paris Gas Light and Coke Company and against your petitioner- for the costs in said cause.

325 Petitioners offer as their surety one John Hamler, of the city of Chicago, Cook county, Illinois.

HENRY PRATT AND JOHN J. RYAN,
PARTNERS AS HENRY PRATT & CO.,
By JOHN T. RICHARDS,
JOSEPH E. DYAS, AND
DAVID F. RAUM, *Their Attorneys.*

STATE OF ILLINOIS:

Appellate Court, Third District, of the May Term, A. D. 1893.

HENRY PRATT and JOHN J. RYAN, Partners as Henry Pratt & Co., Appellant-, *vs.* PARIS GAS LIGHT & COKE CO., Appellee. | No. 123. Appeal from Circuit Court of Edgar County.

STATE OF ILLINOIS, *Sangamon County,* } *ss:*

John T. Richards, being duly sworn, on oath says that he is well acquainted with the financial standing of John Hamler, who is offered as surety in the appeal prayed for in the above-entitled cause to the supreme court of Illinois; that this affiant knows of his own knowledge that said John Hamler is worth more than $20,000 over and above his just debts and liabilities, more than $3,000 of which is in real estate situated in said State of Illinois.

JOHN T. RICHARDS.

Subscribed and sworn to before me this 12th day of December, 1893.

GEO. W. JONES, *Clerk.*

326 And afterwards, to wit, on the 13th day of December, A. D. 1893, there was filed in the office of the clerk of said appellate court an order made by the judges of said appellate court allowing said appeal in said cause, as prayed; which said order is in the words and figures following, to wit:

HENRY PRATT & JOHN J. RYAN, Partners as Henry Pratt & Co., Appellants,
vs.
PARIS GAS LIGHT & COKE COMPANY, Appellees.
No. 123. Appeal from Edgar.

It is hereby ordered that an appeal herein be, and is hereby, allowed to said appellants to the supreme court, as prayed, upon said appellants entering into an appeal bond, with John Hamler as security, payable to said appellee, in the penal sum of five hundred dollars, said bond to be conditioned according to law and filed with the clerk of this court within twenty days from this date, Dec. 13, 1893.

C. C. BOGGS,
GEO. W. WALL,
GEO. W. PLEASANTS,
Judges Appellate Court, 3rd District, Illinois.

And afterwards, to wit, on the 20th day of December, A. D. 1893, there was filed in the office of the clerk of said appellate court a certain appeal bond in said cause; which said appeal bond is in the words and figures following, to wit:

327 Know all men by these presents that we, Henry Pratt & John J. Ryan, as principals, and John Hamler, as surety, of the county of Cook and State of Illinois, are held and firmly bound unto Paris Gas Light and Coke Company, of the county of Edgar, in the same State, in the penal sum of five hundred (500) dollars, lawful money of the United States; for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly, severally, and firmly by these presents.

Witness our hands and seals this eighteenth (18th) day of December, A. D. 1893.

The condition of the above obligation is such that whereas the said Paris Gas Light and Coke Company did, on the thirteenth (13th) day of April, A. D. 1893, in the circuit court of Edgar county, in the State aforesaid, and of the March term thereof, A. D. 1893, recover a judgment against the said Henry Pratt and John J. Ryan for the costs of suit, from which said judgment of the circuit court of Edgar county the said Henry Pratt and John J. Ryan prayed for and obtained an appeal to the appellate court within and for the

third district of said State; and whereas the said appellate court did, on the twenty-eighth (28th) day of November, A. D. 1893, and at the November term thereof, A. D. 1893, affirm the judgment of the circuit court aforesaid and did render judgment against the above bounden for costs of suit, from which order of affirmance and judgment of the said appellate court the said Henry Pratt and John J. Ryan have prayed for and obtained an appeal to the supreme court of the State of Illinois:

328 Now, therefore, if the said Henry Pratt and John J. Ryan shall duly prosecute their said appeal with effect, and, moreover, pay the amount of judgment, costs, interest, and damages rendered against them in case the said judgment shall be affirmed in said supreme court, then the above obligation to be void; otherwise to remain in full force and virtue.

HENRY PRATT. [SEAL.]
JOHN J. RYAN. [SEAL.]
JOHN HAMLER. [SEAL.]

I, Geo. W. Jones, clerk of the appellate court for the third district of the State of Illinois, do hereby certify that the foregoing is a complete transcript of the proceedings had in said court in a certain cause wherein Henry Pratt & Co. were appellants and Paris Gas Light & Coke Company was appellee, as the same appears of record and on file in my office 20th Dec., A. D. 1893.

In testimony whereof I have hereunto set my hand and [SEAL.] the seal of said appellate court, at Springfield, this 20th day of December, A. D. 1893.

GEO. W. JONES,
Clerk Appellate Court, Third District.

Assignment of Error.

And now come said Henry Pratt and John J. Ryan, copartners as Henry Pratt & Co., appellants, by John T. Richards, Joseph E. Dyas, and Daniel F. Raum, their attorneys, and say that there is manifest error in the foregoing record and proceedings, and

329 that the judgment of the appellate court for the third district of Illinois, together with the judgment of the circuit court of Edgar county, should be reversed—

Because the said appellate court for the third district of Illinois erred in affirming the judgment of the circuit court of Edgar county.

JOHN T. RICHARDS,
JOSEPH E. DYAS, AND
DANIEL F. RAUM,
Attorneys for Appellants.

330 And be it further remembered that afterwards, to wit, on the fourth day of January, A. D. 1894, it being one of the days of said January term, A. D. 1894, of said supreme court, cer-

tain proceedings were had in said court and entered of record in the words and figures following, to wit:

HENRY PRATT *et al.* *vs.* PARIS GAS LIGHT & COKE COMPANY.	No. 17. Appeal from Appellate Court, Third District.

On this day come the said parties, by their attorneys, and this being one of the days set apart for the call of the docket under the rules or orders of the court for this term, and this cause coming now on to be heard, the appellants having entered motion to reverse the judgment and remand said cause, and for costs, and the appellee having entered motion to affirm the judgment herein, and for costs and for *procedendo*, and said motions being taken under advisement for final hearing, and the clerk reporting to the court that said cause is now ready to be taken on the call of the docket, it is ordered by the court that this cause be now submitted upon the record, abstracts, briefs, and arguments filed and to be filed herein under the rules or order of the court; and it is further ordered by the court that this cause be now taken under advisement for final hearing.

And be it further remembered that afterwards, to wit, on the second day of April, 1895, an opinion was filed by said supreme court in words and figures following, to wit:

HENRY PRATT & CO. *vs.* THE PARIS GAS LIGHT AND COKE COMPANY.	Appeal from Appellate Court, Third District.

331 PHILLIPS, *J.*:

It was held by the appellate court, as they were warranted by the evidence in doing, that the contract between appellants and appellee was entered into by the latter upon the faith of representations by appellants that the right to use the patent was not disputed, which representations were known to appellants to be untrue when made; and, further, that upon becoming aware of the fact that the rights of appellants were disputed (in respect of which fact there can no longer be any controversy), appellee was justified, as we think it unquestionably was, in its refusal to proceed under the contract, and it therefore necessarily follows that the conclusion of the appellate court that the agreement made by appellants to give an indemnity in the form of a bond, in addition to the covenant in the contract to defend any suit brought for infringement, was upon a valid and sufficient consideration, and the failure of appellants to comply with the agreement would authorize appellee to rescind, hold the apparatus subject to the order of appellants, and refuse to pay therefor. Upon the most careful consideration of the

case, we can find no error in the rulings of the trial court in respect to this issue.

The more important question, and the one chiefly relied on by appellants for reversal, arises from the admission of evidence by the trial court tending to show that the patent claimed by appellants, or their apparatus or machine, was an infringement of a patent controlled by the National Gas Light and Fuel Company.

By the contract between the parties appellee was to have the privilege of using the apparatus and machinery put in by appellants, and the right to so use the same was the sole consid-
332 eration for entering into the agreement and of assuming the liability to pay, for which suit is brought. If appellants had no right to grant the use of such apparatus there was a total failure of consideration, and appellee was not bound, under its contract, to subject itself to liability for infringement upon the Springer patent and might rightfully refuse to be bound whenever it became apparent that the use of the apparatus sold appellee by appellants subjected it to suit for damages by the owners of the Sgringer patent. The apparatus was wholly worthless to appellee if it could not be safely and lawfully used, and appellants having covenanted that it might be so used and induced appellee to purchase it upon the representation and covenant that appellee should have the right to its full enjoyment and use, it follows necessarily that if appellants had no right to sell to appellee the privilege of using the apparatus there was a failure of the consideration for the promises of appellee. Rice *v.* Garnhart, 34 Wis., 453; Bliss *v.* Negus, 8 Mass., 46; Nye *v.* Raymond, 16 Ill., 153.

The foregoing position is not seriously controverted, but it is insisted that this issue was not within the jurisdiction of the State court, and that the question involved fell within the exclusive jurisdiction of the Federal courts—that is to say, that if the issue could be determined in the State courts, it could only be determined after a finding that there was an infringement by the United States court.

It may be conceded, and upon this question there is no conflict of decision, that in a direct proceeding for the infringement of a patent the jurisdiction of the Federal court is exclusive. The weight of authority, however, is that where the question arises col-
333 laterally, as it does in this case, it may be determined in the State court. The defense interposed was that the consideration had failed, in whole or in part, because the purchase by appellee was induced by the false and fraudulent representations of appellants that their apparatus was not an infringement upon the Springer patent, and that there was no claim by the owners of that patent that appellants' patent or apparatus sold by appellants to appellee was, and was claimed by the owners of the Springer patent to be, an infringement upon said patent. Upon this issue was taken and evidence to sustain the plea admitted. The question arose out of a contract between the parties, and the matter of infringement was collaterally involved. In Nye *v.* Raymond, *supra*, it was held that in the absence of matter estopping the defendant

from denying the existence of a patent or the right of the plaintiff to sell it, "the law seems to be settled than in an action for rent for the use of the purchase-money for a patent or pretended patent sold the defendant may show in defense either that there was no such patent or that the patent was invalid or that the plaintiff had no right to sell it," citing Curtis on Patents, 199, 200, and Hayne *v.* Maltby, 3 Term Rep., 438, and a judgment of a circuit court in favor of the defendant was affirmed by this court. As sustaining this doctrine, see also Rice *v.* Garnhart, *supra;* Page *v.* Dickerson, 28 Wis., 695; Middlebrook *v.* Broadbent, 47 N. Y., 443; Slemmer's Appeal, 58 Pa., 155. Numerous other cases sustaining the same doctrine may be found.

We are of opinion that where the question arises collaterally the State court has jurisdiction to determine whether the particular thing is or is not an infringement of a prior patent, and that therefore the court did not err in admitting the testimony complained of.

334 Complaint is made of refusal of instructions asked for by *by* appellants. It can only be determined whether error has been committed when all of the instructions are considered. The appellate court and this court, upon being made aware that all of the instructions are not included in the abstract, might well decline to consider the error assigned in respect of the instructions abstracted. The courts should not be required to pass on a case upon a partial abstract or to go to the record to find those portions of it which are omitted. In this case, however, we find in the record nineteen instructions, given at the instance of appellants, not abstracted, in which every material point in the instructions refused to which appellants were entitled is sufficiently stated.

The objections urged to instructions given at the instance of appellee are each met by the views already espressed. If we are correct in our holding upon the principal questions involved in the case the instructions stated the law with substantial accuracy.

The judgment of the appellate court will be affirmed.

Judgment affirmed.

And be it further remembered that afterwards, to wit, on the second day of April, in the year of our Lord one thousand eight hundred and ninety-five, an order was made by said court in words and figures following, to wit:

HENRY PRATT and JOHN J. RYAN, Partners as Henry Pratt & Company, *vs.* PARIS GAS LIGHT & COKE COMPANY, of the County of Edgar.	Appeal from Appellate Court, Third District.

335 On this day come again the said parties, and the court having diligently examined and inspected as well the record and proceedings aforesaid as the matters and things therein assigned for error, and being now sufficiently advised of and concerning the

premises, for that it appears to the court now here that neither in the record and proceedings aforesaid nor in the rendition of the judgment aforesaid is there anything erroneous, vicious, or defective, and that the record is no error, therefore it is considered by the court that the motions heretofore made to reverse the judgment and remand said cause for a new trial be, and the same are, denied and the motion heretofore made to affirm the judgment herein is allowed, and it is therefore ordered by the court — the judgment aforesaid be affirmed in all things and stand in full force and effect, notwithstanding the said matters and things therein assigned for error, and that motion for *procedendo* be allowed; and it is further considered by the court that the said appellee recover of and from the said appellants costs by it in this behalf expended, and that it have execution therefor.

And be it further remembered that afterwards, to wit, on the 10th day of June, A. D. 1895, an order was made by said court in words and figures following, to wit:

HENRY PRATT *et al.*
vs.
PARIS GAS LIGHT & COKE CO. } Petition for Rehearing.

On this day come again the parties herein, and the court being now sufficiently advised in the premises, it is ordered that the petition for a rehearing herein be denied.

336 And be it remembered that afterwards, to wit, on the 9th day of November, A. D. 1895, there was filed in the office of the clerk of the said supreme court a petition for a writ of error; which said petition is in words and figures following, to wit:

To the Honorable John M. Harlan, justice of the Supreme Court of the United States:

Your petitioners, Henry Pratt and John J. Ryan, partners, doing business as Henry Pratt & Co., respectfully represent that on the 2nd day of April, A. D. 1895, the supreme court of the State of Illinois entered a judgment in a case wherein your petitioners, Henry Pratt and John J. Ryan, partners, as Henry Pratt & Co., were appellants and The Paris Gas Light & Coke Company was appellee; that said supreme court of the State of Illinois is the highest court of the State of Illinois in which a decision in said suit could be had, and that said judgment so rendered was against your petitioners, and was a final judgment in said cause.

Your petitioners further represent that by the record of said cause, pages 36 and 241, inclusive, is shown that on January 8th, 1889, your petitioners, doing business as Henry Pratt & Co., entered into an agreement with the Paris Gas Light & Coke Company to furnish and set up for appellees an apparatus for the making of water gas according to patents issued to said Pratt & Ryan, together with engine, boiler, etc., the entire work of setting up apparatus, engine,

boiler, etc., to be completed before March 1st, 1889; that said Paris Gas Light & Coke Company agreed to pay for the same within thirty days after completion, and after the same should be
337 tested and found satisfactory to appellees, the sum of four thousand eight hundred and fifty (4,850) dollars; that said agreement was in writing (Rec., p. 36), and among other things contained a provision that your petitioners should "save and keep the said party of the first part (the Paris Gas Light & Coke Company) harmless against any suits which might be brought against it for infringement of other patents, and if any such suit is brought" "we (your petitioners) will defend the same at our expense;" that everything required by the terms of said contract was furnished and completed within the time stipulated and tested and found satisfactory; that there is no claim that said contract was not duly performed by your petitioners, but that said Paris Gas Light & Coke Company (see Record, pp. 5 to 213, inclusive) seeks to avoid the payment of the price agreed upon for various reasons, all of which are based upon the claim made by the Paris Gas Light & Coke Company that the apparatus for making water gas set up by your petitioners and covered by their patents is an infringement of patents owned by other parties; that plaintiffs averred that said patents were not an infringement of said Springer patent, and that plaintiffs knew said representations to be untrue.

Your petitioners further represent that on the trial of said cause in the circuit court of Edgar county, in the State of Illinois, notwithstanding the objections of your petitioners, evidence and testimony of expert witnesses was admitted by the court, the purpose of which was to prove that the apparatus constructed by your petitioners in accordance with the patents owned by your petitioners are an infringement of other patents (see Rec., pp. 81 to 187, inclusive), and the said circuit court of Edgar county submitted
338 to the jury, against the objection of your petitioners, the question as to whether the apparatus so constructed by your petitioners was an infringement of any other patent and instructed said jury to decide said issue.

Your petitioners further represent that upon the trial of said cause in the circuit court of Edgar county, in the State of Illinois, and in the appellate court and the supreme court of the State of Illinois your petitioners insisted:

1st. That the issue of infringement of patents raised by the pleadings in said cause was within the exclusive jurisdiction of the courts of the United States, and that said court of the State of Illinois had no jurisdiction of said issue.

2nd. That if the said issue could be determined after a finding and judgment by a court of the United States finding the apparatus covered by the patents of your petitioners to be an infringement of the other patent or patents in question the record of such judgment of a Federal court is the only competent evidence of such infringement.

Wherefore your petitioners represent that the said judgment of the supreme court of the State of Illinois draws into question the

validity of an authority exercised under a statute of the United States, and that the decision thereof has been against the exclusive right of the courts of the United States to determine questions arising under the patent laws of the United States, and that said judgment of the supreme court of Illinois aforesaid decides against the exclusive jurisdiction vested in courts of the United States to determine the question of infringement of patents, and decides against the validity of the authority exercised by the Commissioner of Patents and the letters patent issued to your petitioners by the Commissioner of Patents, and thereby draws in question the validity of an authority exercised under the laws of the United States, and the decision was and is against the exclusive right vested in the courts of the United States by the laws of the United States
339 to determine questions under the patent-right laws of the United States, and said judgment fails to give full faith, credit, and effect to the authority exercised by said Commissioner of Patents; that said judgment overlooks and disregards express acts of said Commissioner of Patents and declare- the same to be a violation of the laws of the United States. and said decision of said supreme court of the State of Illinois finds that said letters patent issued to your petitioners are an infringement upon what is known as the Springer patent, owned and controlled by the National Gas Light & Fuel Company, and that in said judgment there is error to the damage of your petitioners.

Wherefore your petitioners p-ay for the allowance of a writ of error and such other process as will enable your petitioners to obtain a review of said cause and of a correction of the errors hereinbefore alleged by the Supreme Court of the United States.

Respectfully submitted.

JOHN T. RICHARDS,
Attorney for Henry Pratt and John J. Ryan,
Partners as Henry Pratt & Company.

Dated at Washington, D. C., this 8th day of October, 1895.

Writ of error allowed, bond for costs in $400 to be given.
October 8th, 1895.

JOHN M. HARLAN,
Asso. Justice Sup. Ct. U. S.

340 And be it remembered that afterwards, to wit, on the 9th day of November, A. D. 1895, there was filed in the office of the clerk of said supreme court a bond; which said bond is in words and figures following, to wit:

Know all men by these presents that we, Henry Pratt and John J. Ryan, as principals, and John Hamler, as sureties, are held and firmly bound unto Paris Gas Light and Coke Company in the full and just sum of four hundred dollars, to be paid to the said Paris Gas Light and Coke Company, its successors, certain attorney, or assigns; to which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally, by these presents.

Sealed with our seals and dated this 18th day of October, in the year of our Lord one thousand eight hundred and ninety-five.

Whereas lately, at a term of the supreme court of the State of Illinois for the central grand division, in a suit pending in said court between Henry Pratt and John J. Ryan, partners as Henry Pratt & Co., appellants, and Paris Gas Light and Coke Company, appellee, a judgment was rendered against said Henry Pratt & John J. Ryan, and the said Henry Pratt and John J. Ryan having obtained a writ of error and filed a copy thereof in the clerk's office of the said court to reverse the judgment in the aforesaid suit, and a citation directed to the said Paris Gas Light and Coke Company, citing and admonishing it to be and appear at a Supreme Court of the United States to be holden at Washington within 30 days from the date thereof:

341 Now, the condition of the above obligation is such that if the said Henry Pratt and John J. Ryan shall prosecute their writ of error to effect and answer all damages and costs if they fail to make their plea good, then the above obligation to be void: else to remain in full force and virtue.

HENRY PRATT. [SEAL.]
JOHN J. RYAN. [SEAL.]
JOHN HAMLER. [SEAL.]

Sealed and delivered in the presence of—

——— ———.

Approved by—
JOHN M. HARLAN,
Associate Justice of the Supreme Court U. S.

Be it remembered that afterwards, to wit, on the 13th day of November, A. D. 1895, there was filed a citation, with affidavit of service of same; which said citation and affidavit is in words and figures following, to wit:

UNITED STATES OF AMERICA, *ss*:

To Paris Gas Light and Coke Company, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within 30 days from the date hereof, pursuant to a writ of error filed in the clerk's office of the supreme court of the State of Illinois, wherein Henry Pratt and John J. Ryan, partners as Henry Pratt & Co., are

342 plaintiffs in error and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiffs in error, as in the said writ of error mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable John M. Harlan, associate justice of the Supreme Court of the United States, this fifth day of November, in the year of our Lord one thousand eight hundred and ninety-five.

JOHN M. HARLAN,
Associate Justice of the Supreme Court of the United States.

On this 9th day of November, in the year of our Lord one thousand eight hundred and ninety —, personally appeared before me the subscriber, Richard S. Dyas, and makes oath that he delivered a true copy of the within citation to Zara E. Powell, president of the Paris Gas Light and Coke Company.

RICHARD S. DYAS.

Sworn to and subscribed the 9th day of November, A. D. 1895.
[SEAL.] HENRY F. NELSON, *N. P.*

343 I, E. A. Snively, clerk of the supreme court in and for the central grand division, State of Illinois, do hereby certify that the above and foregoing is a complete, true, and correct copy of the record of the circuit court of Edgar county, the record of the appellate court of the third district, the proceedings in the appellate court, petition for writ of error, bond, citation, and affidavit of service of same, in a certain suit wherein Henry Pratt and John J. Ryan were appellants and The Paris Gas Light and Coke Company was appellee, as the same appears from the record and files in my office.

Seal of the Supreme Court, State of Illinois, Aug. 28, 1818.

In testimony whereof I have hereunto set my hand and affix the seal of said supreme court, at Springfield, this 22nd day of November, A. D. 1895.

E. A. SNIVELY,
Clerk Supreme Court.

344 UNITED STATES OF AMERICA, *ss:*

To Paris Gas Light and Coke Company, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within 30 days from the date hereof, pursuant to a writ of error filed in the clerk's office of the supreme court of the State of Illinois, wherein Henry Pratt and John J. Ryan, partners as Henry Pratt & Co., are plaintiffs in error and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiffs in error, as in the said writ of error mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable John M. Harlan, associate justice of the Supreme Court of the United States, this fifth day of November, in the year of our Lord one thousand eight hundred and ninety-five.

JOHN M. HARLAN,
Associate Justice of the Supreme Court of the United States.

345 [Endorsed:] Citation and affidavit of service. Filed Nov. 13, 1895. E. A. Snively, clerk.

On this ninth day of November, in the year of our Lord one thousand eight hundred and ninety-five, personally appeared before me

the subscriber, Richard S. Dyas, and makes oath that he delivered a true copy of the within citation to Zara E. Powell, the president of the Paris Gas Light and Coke Company.

RICHARD S. DYAS.

Sworn to and subscribed the 9th day of November, A. D. 1895.

[Seal of Henry F. Nelson, Notary Public, Edgar Co., Ills.]

HENRY F. NELSON, *N. P.*

346 In the Supreme Court of Illinois, Central Grand Division.

HENRY PRATT and JOHN J. RYAN, Partners as Henry Pratt & Co., *vs.* PARIS GAS LIGHT AND COKE COMPANY. } Appeal from Appellate Court, Third District.

I, E. A. Snively, clerk of the supreme court of Illinois for the central grand division, do hereby certify that on the 9th day of November, in the year 1895, that the following writ of error, together with a copy thereof for the defendant in error, was lodged in my office, at Springfield, in the State of Illinois.

Witness my hand and the seal of said supreme court of Illinois, at Springfield, Illinois, this 22nd day of November, A. D. 1895.

[Seal of the Supreme Court, State of Illinois, Aug. 28, 1818.]

E. A. SNIVELY,
Clerk Supreme Court, State of Illinois.

347 UNITED STATES OF AMERICA, *ss:*

[Seal of the Supreme Court of the United States.]

The President of the United States of America to the honorable the judges of the supreme court of the State of Illinois, Greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the said supreme court, before you or some of you, being the highest court of law or equity of the said State in which a decision could be had in the said suit between Henry Pratt and John J. Ryan, partners as Henry Pratt & Co., appellants, and Paris Gas Light & Coke Company, appellee, wherein was drawn in question the validity of a treaty or statute of or an authority exercised under the United States and the decision was against their validity, or wherein was drawn in question the validity of a statute of or an authority exercised under said State, on the ground of their being repugnant to the Constitution, treaties, or laws of the United States, and the decision was in favor of such their validity, or wherein was drawn in question the construction of a clause of the Constitution or of a treaty or statute of or com-
348 mission held under the United States and the decision was against the title, right, privilege, or exemption specially set up or claimed under such clause of the said Constitution, treaty, statute, or commission, a manifest error hath happened, to the great dam-

age of the said appellants, as by their complaint appears, we, being willing that error, if any hath been, should be duly corrected and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then, under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same in the said Supreme Court, at Washington, within 30 days from the date hereof, that, the record and proceedings aforesaid being inspected, the said Supreme Court may cause further to be done therein to correct that error what of right and according to the laws and customs of the United States should be done.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, the fifth day of November, in the year of our Lord one thousand eight hundred and ninety-five.

JAMES H. McKENNEY,
Clerk of the Supreme Court of the United States.

Allowed by—

JOHN M. HARLAN,
Associate Justice of the Supreme Court of the United States.

349 STATE OF ILLINOIS, } ss:
Supreme Court, Central Grand Division, }

In obedience to the within writ I herewith transmit a full, true, and correct copy of the transcript of the record of the circuit court of Edgar county, Illinois; a full, true, and correct copy of the transcript of the record of the appellate court in and for the third district, State of Illinois; a full, true, and correct copy of all the proceedings had and entered of record in the supreme court, State of Illinois, in a certain suit wherein Henry Pratt and John J. Ryan, partners as Henry Pratt & Company, were appellants and The Paris Gas Light & Coke Company was appellee, and also a full, true, and correct copy of the petition for a writ of error, bond, citation, and affidavit of service of same in said cause, as the same appears from the records and files in my office.

Seal of the Supreme Court, State of Illinois, Aug. 28, 1818.

Witness my hand and the seal of said supreme court, at Springfield, Illinois, this 22d day of November, A. D. 1895.

E. A. SNIVELY,
Clerk Supreme Court.

350 In the Supreme Court of the United States.

HENRY PRATT and JOHN J. RYAN, Partners as Henry Pratt & Co., Plaintiffs in Error,
vs.
PARIS GAS LIGHT AND COKE COMPANY, Defendant in Error.

Error to the Supreme Court of the State of Illinois.

Assignment of Errors.

1. The supreme court of Illinois erred in that its finding and judgment are contrary to the law.

2. The supreme court of Illinois erred in that its finding and judgment are contrary to the evidence.

3. The supreme court of Illinois erred in affirming the judgments of the appellate court and of the circuit court of Edgar county, Illinois.

4. The supreme court of Illinois erred in holding that the circuit court of Edgar county, in the State of Illinois, had jurisdiction to determine whether the patents issued to Henry Pratt and John J. Ryan are an infringement of any other patent or patents.

5. The supreme court of Illinois erred in holding that the circuit court of Edgar county, Illinois, had jurisdiction to determine whether the apparatus constructed by Henry Pratt & Co. for the Paris Gas Light and Coke Company is an infringement of any other letters patent.

6. The supreme court of Illinois erred in holding that the circuit court of Edgar county, Illinois, had jurisdiction to determine whether the apparatus or machine constructed by the plaintiffs in error for the defendant in error at Paris, Illinois, is an infringement upon letters patent owned by the National Gas Light and Fuel Company.

7. The supreme court of Illinois erred in holding that the
351 circuit court of Edgar county, in the State of Illinois, on the trial of this cause properly admitted the testimony of witnesses tending to prove that the apparatus constructed by plaintiffs in error for the defendant in error at Paris, Illinois, in accordance with patents duly issued to plaintiffs in error by the Commissioner of Patents of the United States, is an infringement of letters patent owned by other persons or corporations.

8. The supreme court of Illinois erred in refusing to hold that the circuit court of Edgar county, Illinois, erred in admitting the testimony of witnesses for the purpose of determining whether the apparatus or machine constructed by the plaintiffs in error for the defendant in error is an infringement of the other patents offered in evidence in this case.

9. The supreme court of Illinois erred in refusing to hold that, in the trial of this suit in the circuit court of Edgar county, in the State of Illinois, the only evidence competent to prove that the ap-

paratus constructed in accordance with the letters patent issued to and owned by plaintiffs in error for defendant in error at Paris, Illinois, is an infringement of any other letters patent is a final judgment or decree of a court of the United States finding such patent or an apparatus constructed in accordance therewith to be an infringement of such other letters patent.

10. The supreme court of Illinois erred in refusing to hold that the reissued letters patent number 10032, issued to Theodore G. Springer, are void, and that by reason thereof the apparatus constructed by plaintiffs in error for the defendant in error is not an infringement of said reissued letters patent.

11. The supreme court of Illinois erred in that its decision is against the exclusive right and jurisdiction of the courts of the United States to determine questions arising under the patent laws of the United States.

352 12. The supreme court of Illinois erred in that its decission in this case is against the validity of an authority exercised by the Commissioner of Patents in granting to the plaintiffs in error the letters patent in accordance with which the apparatus in question was constructed by the plaintiffs in error for defendants in error.

13. The supreme court of Illinois erred in that its judgment in this cause fails to give full faith, credit, and effect to the authority exercised by the Commissioner of Patents under and by virtue of the laws of the United States and declares the acts of said Commissioner of Patents in granting said letters patent to plaintiffs in error to be in violation of the laws of the United States.

14. The supreme court of Illinois erred in finding that the apparatus constructed by plaintiffs in error for defendant in error is an infringement of any other letters patent.

15. The supreme court of Illinois erred in refusing to hold that the decission of the question of infringement presented in this case required said court to determine a case arising under the patent-right laws of the United States.

JOHN T. RICHARDS,
Attorney for Henry Pratt and John J. Ryan,
Partners as Henry Pratt & Co., Plaintiffs in Error.

Endorsed on cover: Case No. 16,098. Illinois supreme court. Term No., 380. Henry Pratt and John J. Ryan, partners as Henry Pratt & Company, plaintiffs in error, *vs.* Paris Gas Light and Coke Company. Filed December 4, 1895.

APR 22 1897
JAMES H. McKENNEY
CLERK

No. 380.

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Brief of Richards for P. E.

Filed April 24, 1897.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1896.

HENRY PRATT and JOHN J. RYAN, Partners as Henry Pratt & Co., *Plaintiffs in Error,*

vs.

PARIS GAS LIGHT AND COKE COMPANY, *Defendant in Error.*

Error to the Supreme Court of Illinois.

BRIEF AND ARGUMENT FOR PLAINTIFFS IN ERROR.

JOHN T. RICHARDS,
Attorney for Plaintiffs in Error.

Geo. Hornstein & Co., Printers, Chicago.